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June 9/16, 1969

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RAILWAY AGE

THE TRANSPORTATION WEEKLY

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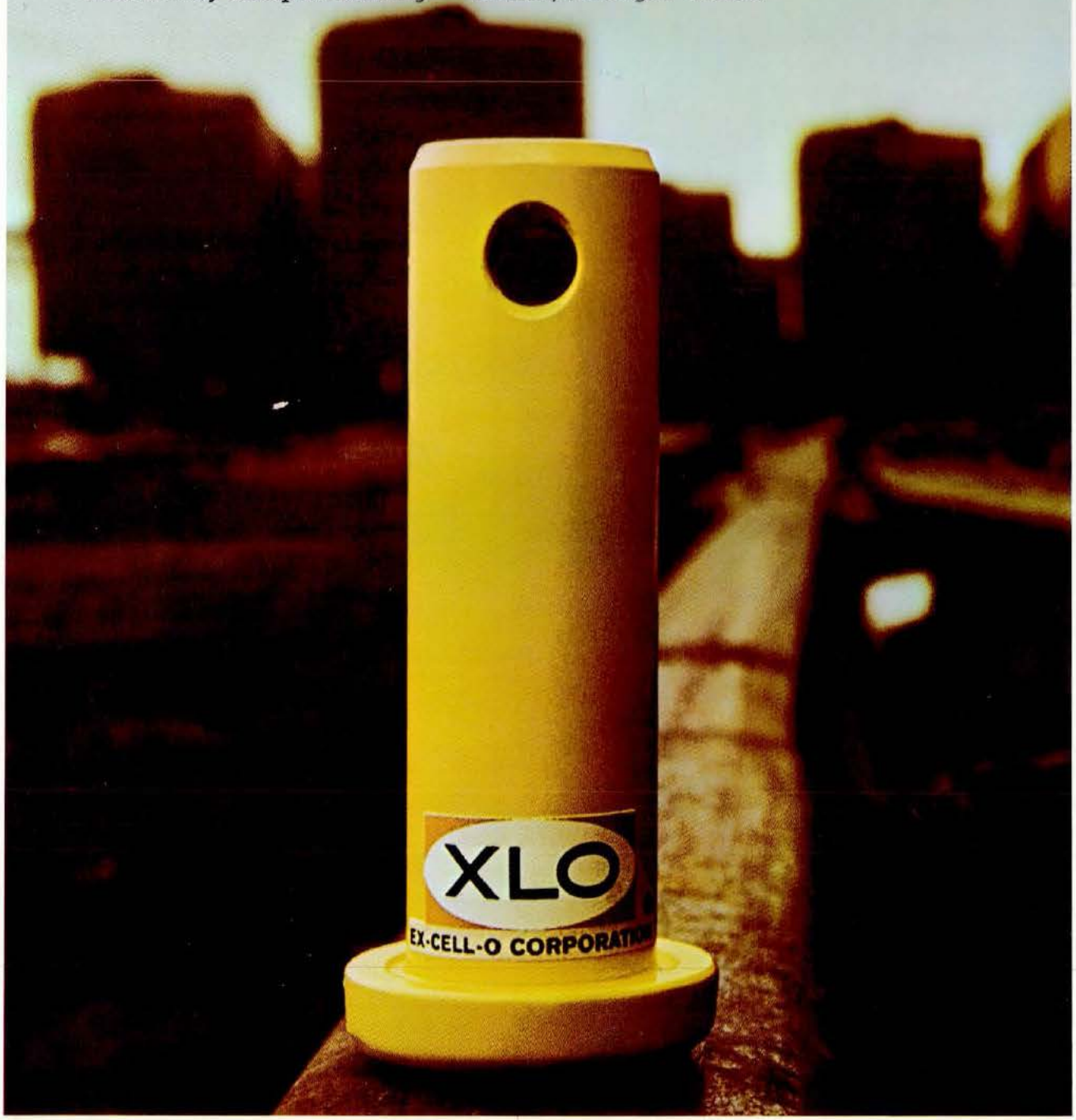

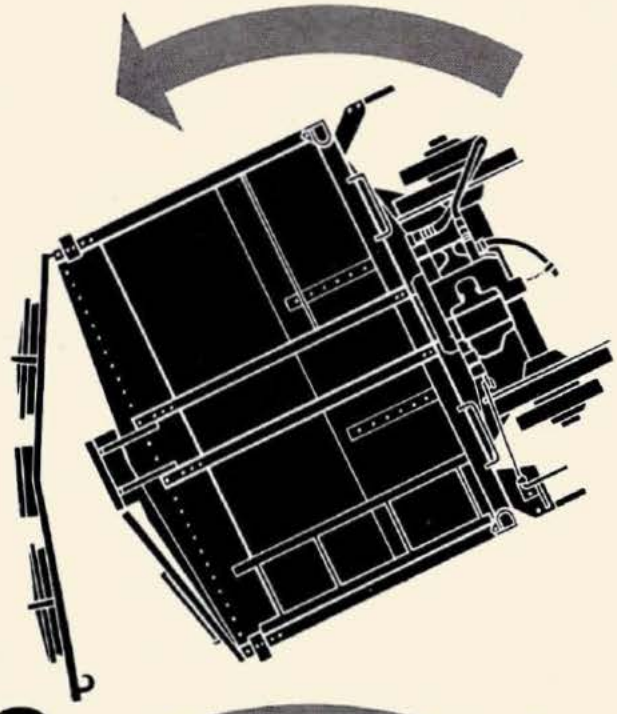

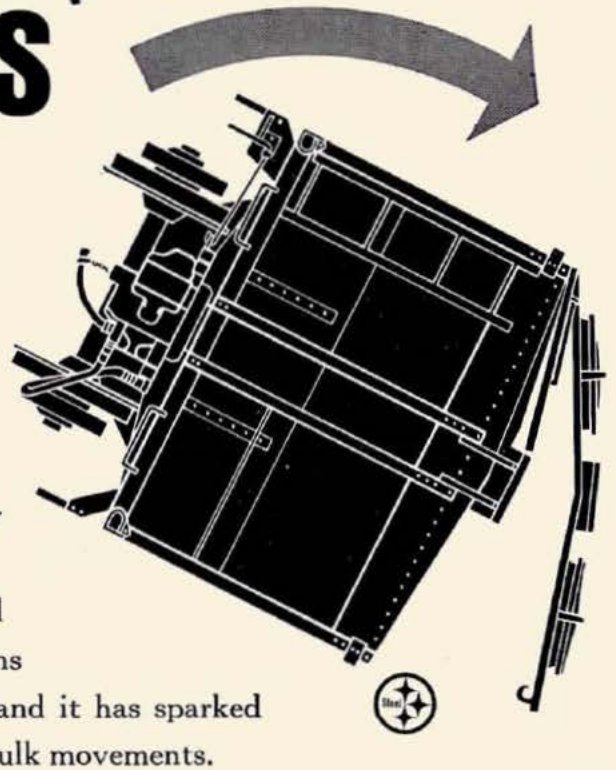

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RAILWAY AGE

June 9/16, 1969 • Vol. 166, No. 21

THIS WEEK

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It's been called a showcase for electrification of U.S. railroads.

20 ATSF safety program gets big results
Personal injury figures alone have shown an improvement of 35%.

24 Superintendents lay the problems on the line
Their Washington meeting this week will deal with major questions.

26 Flood preparation paid off for the CB&Q
It cost $350,000, compared with 1965 damage costs of $3,500,000.

42 Viewpoint—Public relations: Vital for railroads
No function on tomorrow's railroad will be more important.

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. . . AND COMING NEXT WEEK

Tomorrow's Railroads: Management and the ability to manage. The June 23 issue of Railway Age will contain the sixth section of a 12-part Golden Spike Centennial Year series. This section will explore, among other things, management/labor and management/government relations. Another article will discuss "software" solutions to two rolling stock problems posed by railroad mergers. The issue will also carry the program for the 40th meeting of the AAR Mechanical Division.

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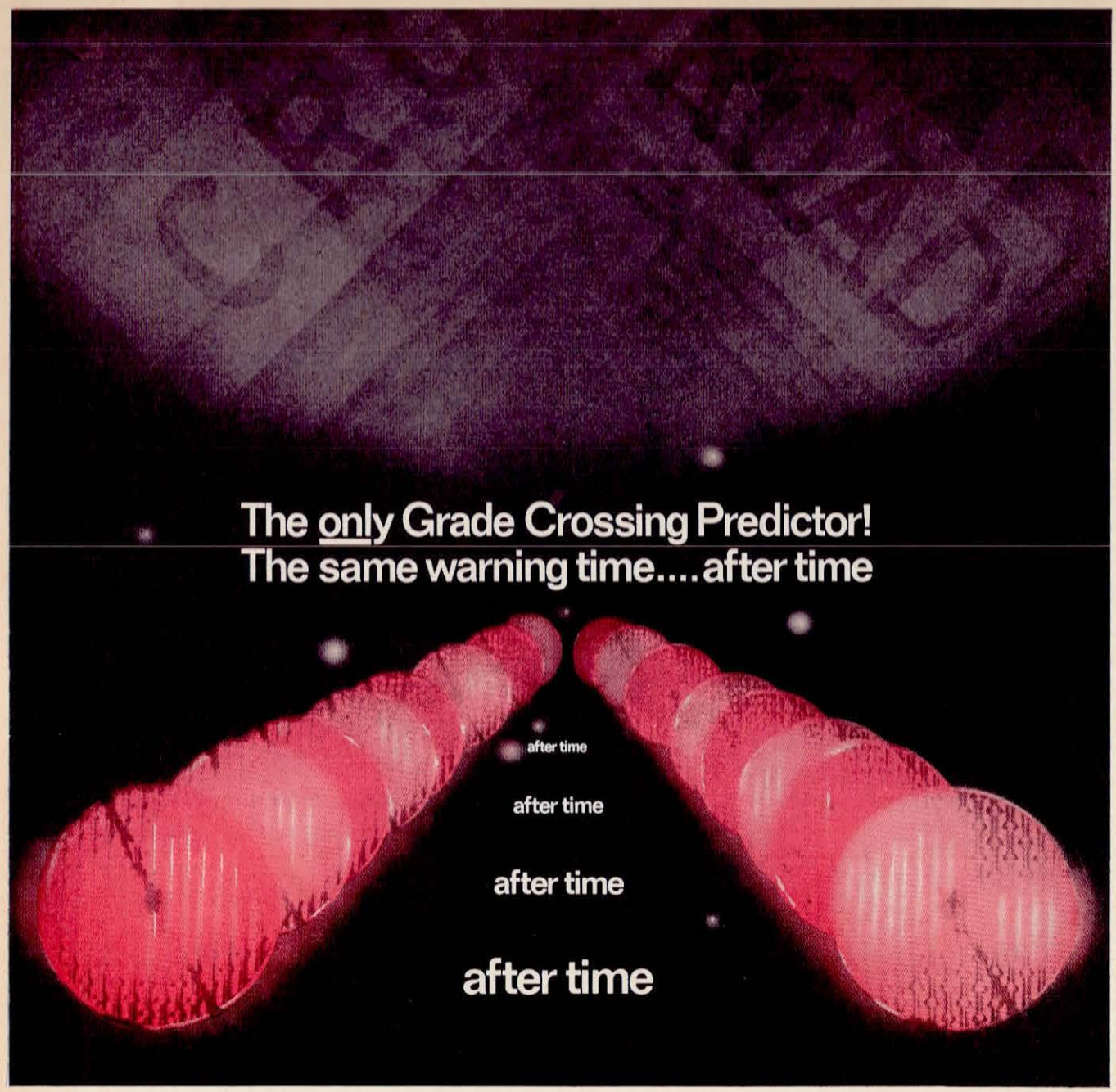

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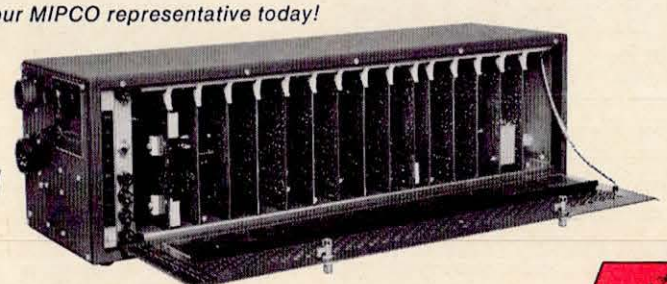

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SHORT AND SIGNIFICANT

Volpe: The high cost of automobility

Transportation Secretary John A. Volpe rarely misses an opportunity to plug the cause of mass transit—and he found another as he addressed the 1969 class of Butler University at Indianapolis. Asserting that "we should develop more sensitivity toward the social consequences of our personal tastes," Volpe considered the case of the family that buys a second car: "That family is not aware that its choice of living pattern and mode of transportation—multiplied a million times—is creating a social disaster for our cities. We forget that our automobility is paid for by urban centers in the coin of ugliness, pollution, decay, and violence. This system must and will be modified as we develop radical new forms of mass transit."

GE cited for leadership in urban transport

For 75 years, General Electric has been developing hardware for the mass transit industry. But there was more than this behind a citation for "Leadership in Urban Transportation" that went to GE during the recent National Seminar on Urban Transportation at Denver. "Additionally," said the citation, "the General Electric Co. has provided leadership in the education of city officials and civic leaders. GE has awakened many people to the needs for balanced transportation systems, for relating transportation planning to land use and sociological development, and to the technological possibilities of integrated systems, with each mode of transportation utilized to best advantage." Bryce W. Wyman, GE vice president and general manager of the Transportation Systems Division, accepted the award, which was made jointly by the University of Colorado's Center for Urban Affairs and U.S. Department of Transportation.

Attorney fees in L&D cases get new hearing

Should shippers, especially small ones, be awarded attorney's fees and other court costs when they successfully sue a carrier for loss and damage? Yes, say grain and feed dealers and manufacturers, and fresh fruit and vegetable dealers. No, say rail, truck and bus operators. The opinions came out of a Senate surface transportation subcommittee hearing last week. Rail men, at whom such a bill is particularly aimed, say the proposal: (1) would encourage and multiply claims litigation; (2) would retard voluntary claims settlement; and (3) is contrary to all jurisprudence. Similar legislation, with softening amendments, was reported out of the subcommittee in the two previous Congresses, but it got no floor action.

New company will lease trailer chassis

Continental Trailer Corp. and ATC Leasing Co. have jointly formed a new company, Continental Transportation Systems, to lease trailer chassis for the ground hauling of ocean freight containers. Stephen Vyn, president of the new firm, said initial agreements have been reached with American President Lines and the Union Pacific Railroad. "Containerization of freight has undergone a rapid growth in the last few years, but there are far more containers than there are chassis to haul them from ocean docks to inland terminals. We hope to fill this void," said Vyn.

Airlines see short haul role for railroads

A current airline industry study suggests that long-distance train travel will become "practically extinct" by 1980, when airlines expect to have 85% of the domestic intercity common-carrier travel market, compared to 73% today. But the airlines see a growing role for new-breed, short distance trains. "During the next decade, high-speed rail passenger trains, like the New York-Washington Metroliner, will be utilized more by the travel consumer in connection with 100-300 mile journeys through heavily populated megalopolitan areas," predicts George W. James, vice president-economics and finance, of the Air Transport Association of America.

MONDAY MORNING REPORT

WHITMAN DIAGRAMS FRA ROLE

How does the Federal Railroad Administration fit the Nation's transport picture? Reginald N. Whitman, Administrator, sees the FRA role clearly. First, he says, FRA must tell the railroad story to those "uninformed people" who have written railroads off. FRA must especially reach people in and out of government "who do not understand the transportation problems this country would face should the railroads cease to exist." It is estimated that other modes could handle only 10% of the rail tonnage, Whitman says.

PROMOTE ECONOMIC EFFICIENCY . . .

Second, FRA must take up the Transportation Department responsibility toward the rail industry. That includes helping railroads work toward a safe, efficient and marketable transport product while supporting rail ability to gain stable, long-term growth through profitable operation. FRA must promote "economic efficiency," adequate safety standards, industry progress, and national interests as affected by the railroad industry, Whitman says.

. . . THROUGH COMMUNICATION AND ADVOCACY

How will FRA do this? His Administration, Whitman says, is trying to serve as the communications link between railroads and the government, and to "exert leadership by coordinating the industry's many talents and drives." Also, FRA is attempting to act as a rail advocate in the Department, "in balance with the public interest." Finally, through research, FRA is trying to serve the national interest by pushing development of "a better product and more secure industry."

AND TELL THE INDUSTRY'S NEEDS

Whitman sees a third FRA duty—to recommend ways for the government to help railroads stay financially sound and capable of giving service suited to the national interest. "I have a feeling that Congress is extremely interested in railroad problems and is willing to do something constructive for the railroad industry. The problem, it seems to me, is that no one has been able to define what form this help should take." The new administrator already has the opportunity to live up to those words. John A. Volpe, Transportation Secretary, has asked Whitman to make "an early reply" to an important question. The question is how the government can help rails survive as a key element in a national transport system (RA, May 26, p.52). Volpe echoed the message from Capitol Hill that Whitman says came through early, loudly and clearly. That message, Whitman says, was: "First—FRA, get cracking; second—Whitman, good luck."

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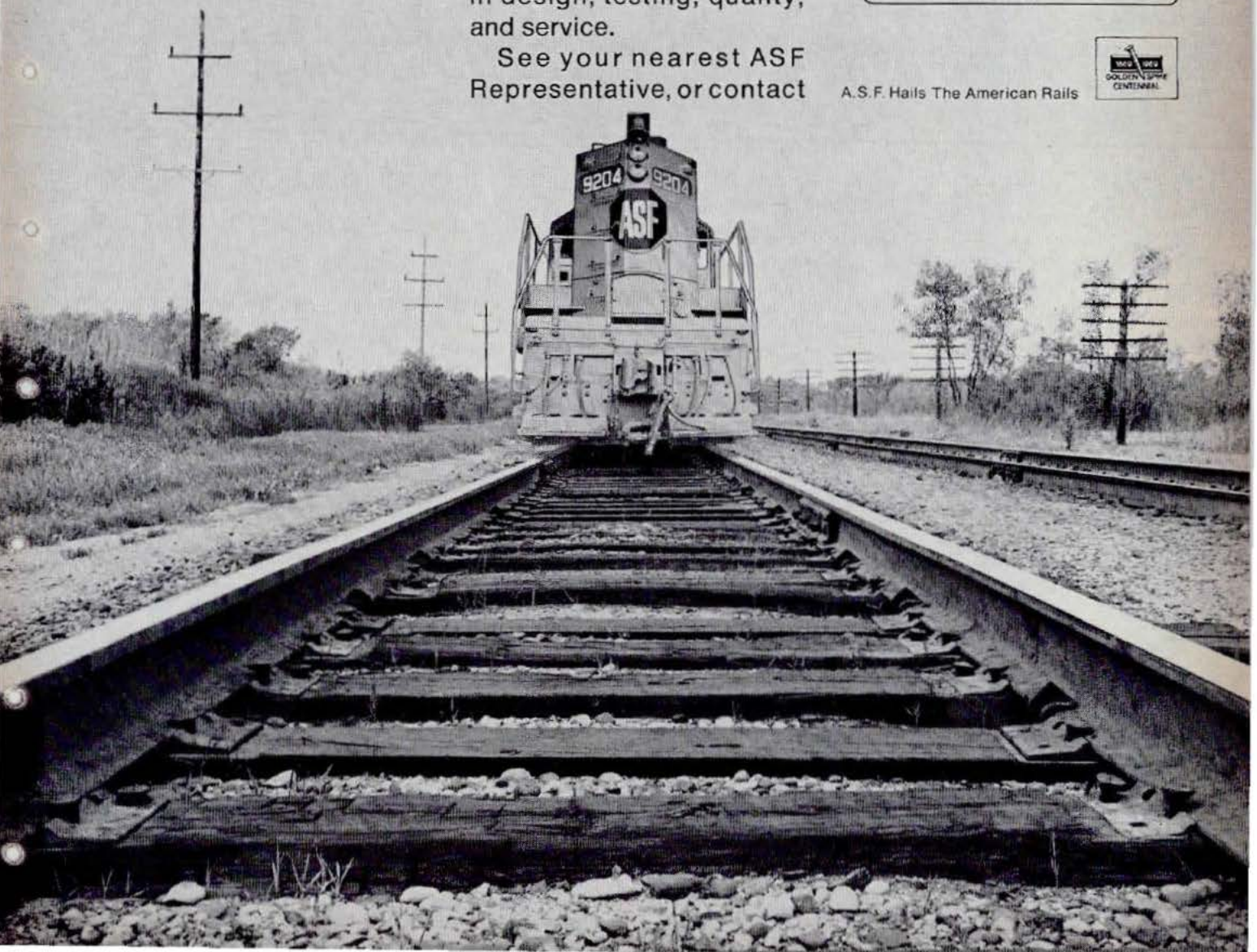

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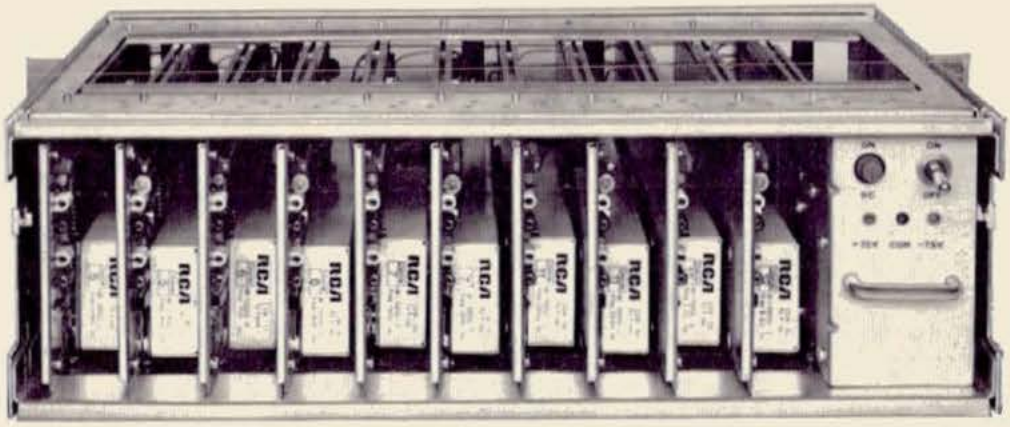

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RAILWAY AGE
THE TRANSPORTATION WEEKLY
JUNE 9/16, 1969

WEEK AT A GLANCE

ICC wants more power to ease car shortages

To minimize freight-car shortages, the Interstate Commerce Commission needs power to set penalty per-diem charges and enlarge its enforcement and car-service operations. So Virgina Mae Brown, ICC chairman, has told the Senate Commerce Committee.

The request for such power came after Committee hearings left Senators and the Commission disagreeing on whether the ICC already has enough authority to deal with car shortages.

"If we are to make any marked progress in dealing with the existing and future difficulties of car service," said Mrs. Brown, "we must stop nibbling at the edges of this national problem and put some new teeth and concentrated effort into the enforcement measures which we are presently empowered to implement and enforce."

"Increases of per diem by amounts of $100 a day or more might be justified when carriers owning the most cars experience shortages because the vast majority of their fleet is being detained for the benefit of the non-owning lines," she added.

Secondly, the Commission wants authority to order cars to any region where a shortage is threatened. Thirdly, Mrs. Brown wants to reorganize and enlarge the ICC's railroad section to include regulatory, operational, car utilization and distribution branches, plus a permanent railroad service board.

American group seeks rights to British train

A group of North American railway suppliers, headed by the Budd Co., is negotiating with British Railways for exclusive U.S. and Canadian rights to the "Advanced Passenger Train" (APT) technology that is being developed at the British Railways Research Center at Derby, England. In addition to Budd, the consortium reportedly would include a steel company, an aluminum company, an electrical company, and a manufacturer of hydraulic cushioning equipment, all in the U.S., plus a Canadian carbuilder. The turbine-powered APT is designed to travel on conventional rails at 130 mph. Six years of research have gone into the project. A full-scale working model is due by 1971 for testing; and British Railways plans to have two of the trains in operation by 1974.

"City" train, "CZ," up for discontinuance

Once again, proposals are being made for discontinuance of two Chicago-San Francisco Passenger trains. Rio Grande and Western Pacific are asking the ICC to permit them, this time, to suspend operation of the "California Zephyr" which they handle on the Denver-Salt Lake City and Salt Lake City-San Francisco legs of its run. And Southern Pacific is posting notices covering discontinuance of the "City of San Francisco" which SP operates between Ogden, Utah, and San Francisco. Twice before, the Commission has rejected train-off applications involving the "Zephyr." Once before, it turned down a plea on the "City" train. Again, Rio Grande, WP and SP are citing heavy losses from continued operation of the lightly-patronized streamliners. SP Passenger Traffic Manager Robert M. Jochner says his road is losing $3,800 a day on the "City" operation. The economics of the situation, he says, "are a manager's nightmare." On the "CZ" trains, Rio Grande cites losses of more than $1.7 million last year; Western Pacific says its loss is now running at a rate of more than $2 million annually. WP President M. M. Christy adds this note: "Losses of this magnitude are unbearable and cannot be allowed to continue. The ICC twice has studied these trains while losses mount, patronage declines and well-intentioned amateurs talk about how railroad passenger operations, in their uninformed opinions, can be made profitable. In all good conscience and elemental fairness, the ICC this time should refuse to comply with the requests of these amateurs for a third study of the operations of these trains. Facing up to the fact that the economic burden of these trains looms a a very real threat to the stability of WP's over-all operations, [the ICC] should allow our notice of discontinuance to become effective." Meanwhile, Southern Pacific is also before the California PUC with a request—denied once previously—to drop the "San Joaquin Daylight" operation between Los Angeles and the Bay Area, which loses about $3,200 a day.

GUS WELTY

LINES ON LABOR

THE MAILMAN WAS WEARING asbestos gloves, and that should have been the tip-off. It seems that at least one segment of rail labor—that represented by the Brotherhood of Locomotive Engineers—is highly miffed at a recent Lines on Labor which commented on the lack of labor-participation in the festivities at Promontory (RA, May 26, p. 12). First came letters. Then came the June 6 issue of the "Locomotive Engineer," the union's official publication. And there, stretching over two columns (in blue ink) was this headline: "BLE was at Promontory, despite Welty comments." Well, maybe that's what you get when you try just a little bit of symbolism.

FOR THE RECORD, the BLE was much in evidence during Golden Spike week in Utah. As LonL pointed out, there was a western union convention in session in Ogden. There was also the BLE-sponsored Governor's Ball. And top officers of the organization, along with a sizeable contingent of members and their families, were in the audience.

SEVERAL OBSERVATIONS might be made. First, the whole atmosphere at Promontory was that of a Box Elder County Fair. And while there were railroad people on the platform, they were almost overwhelmed by the horde of politicians on the scene. If labor thinks there was some dark plot for management to steal the show, well, labor can take solace from the fact that the "plot" didn't work. Second, while the BLE obviously thinks it has a legitimate gripe—that its people were not invited to the platform—at the same time the union almost seems to be over-reacting. And then, there's the real question of who speaks for rail labor. Is it the chairman of the Railway Labor Executives' Association? The rail union representative on the AFL-CIO Executive Council? The presidents of the biggest unions? Or the BLE, oldest of the unions but one which seems to stand aloof.

ANYHOW, THE WHOLE POINT of the May 26 LonL was that Promontory was a symbol—a time for a summing-up and a re-dedication, a time when it would have been fitting for rail labor somehow to assert its own faith in the future and pledge its support. That kind of statement could have been made at Promontory. It could also have been made from Washington, from Chicago, from Cincinnati or from the steps of the Cuyahoga County Court House in Cleveland, Ohio. And come to think of it—recalling the heat, the noise and the confusion at Promontory—such a statement might have been more noted and longer remembered *had* it come from somewhere else. But there was that silence.

BART's 250 cars: low bid from a "stranger"

A company that never before built a rapid-transit car may have its builder's plate on the first cars to operate over the Bay Area Rapid Transit System. Rohr Corp., a California-based aerospace company, stands as the apparent low bidder for a 250-car production order. BART is now studying the bids, and a contract award could come through at a directors' meeting set for July 10.

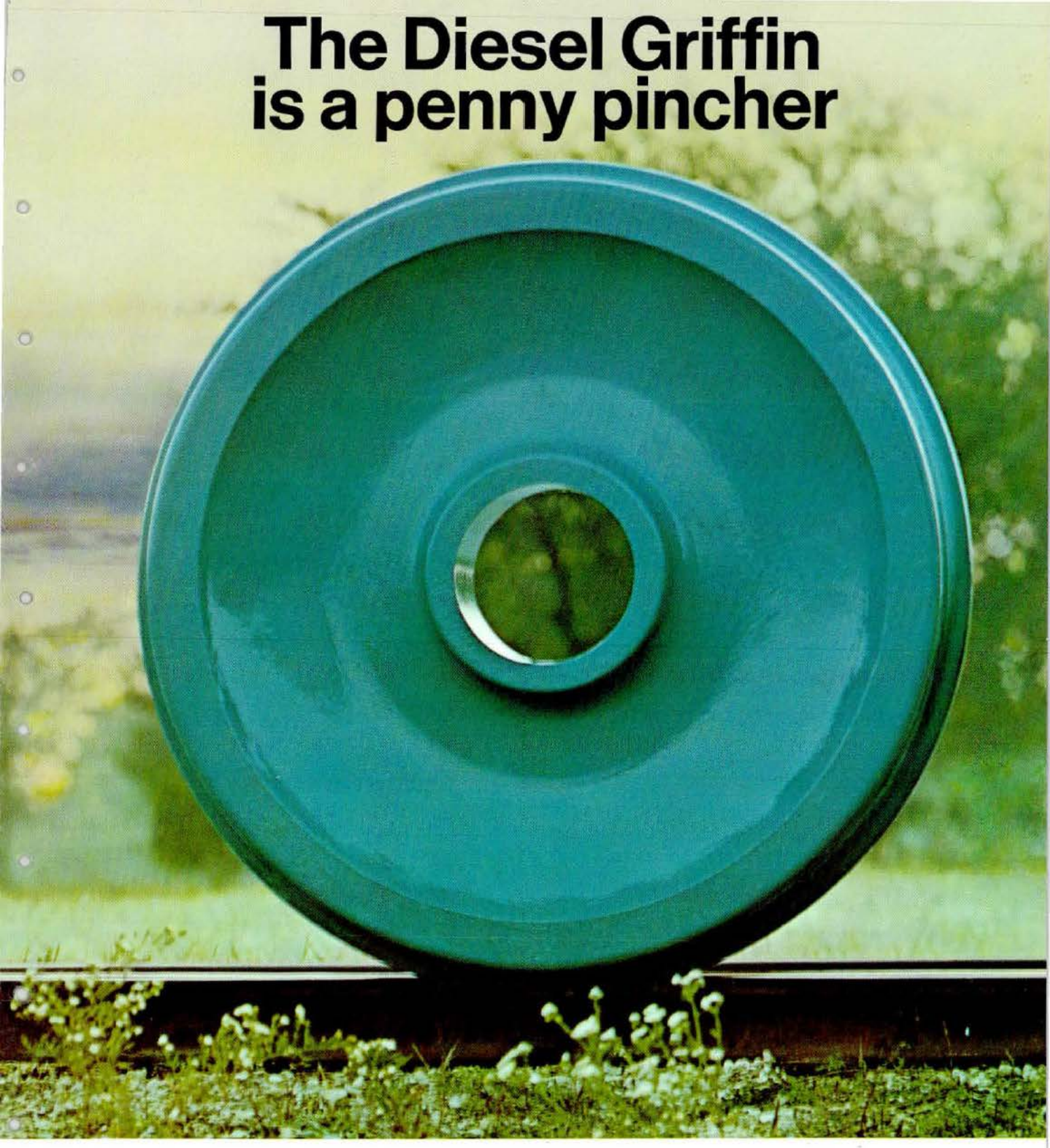
BART's call for bids drew only three responses—and the bid range was narrow. Rohr came in with a base bid on aluminum cars of $59,094,967; Pullman-Standard quoted $60,967,792; and St. Louis Car Division of General Steel Industries came in at $62,363,641. On a per-unit basis, that works out to a difference of only $7,491 between P-S and Rohr, and of about $13,000 between GSI and Rohr. Specification also permitted bids on stainless steel cars, which came in at somewhat higher figures than for aluminum.

BART's bid opening was not without its complicating elements. Bidders quoted prices on the base 250-car lot and also on an additional 100 units, considered as an option. But P-S pointed out that if BART looked at the figures on a 350-car basis, the order-of-finish in the bidding would be changed. The prices cited on 350 units: Pullman-Standard, $90,022,392; Rohr Corp., $92,908,867. A BART spokesman, however, indicated that the "specifications are clear"—bids to be based on 250 cars, and the option is just that.

Some observers thought it possible that a question might also be raised regarding a requirement that bidders submit data on "not less than five manufacturing projects involving equipment similar to that described [in the BART specs] which your organization has completed within the past five years." Rohr, if it gets the contract, would be brand new to the transit field. But BART has emphasized that its specs require the manufacturer to use a systems-design approach common to aerospace industry—a business in which Rohr has been big.

BART has a $28-million capital grant from the Department of Transportation to help cover the cost of the equipment. It also has a $5-million demonstration grant for ten prototype cars, which are scheduled for delivery in mid-1970. Delivery of the remaining 240 cars is to begin in third quarter 1971, or first quarter 1972.

The Diesel Griffin is a penny pincher



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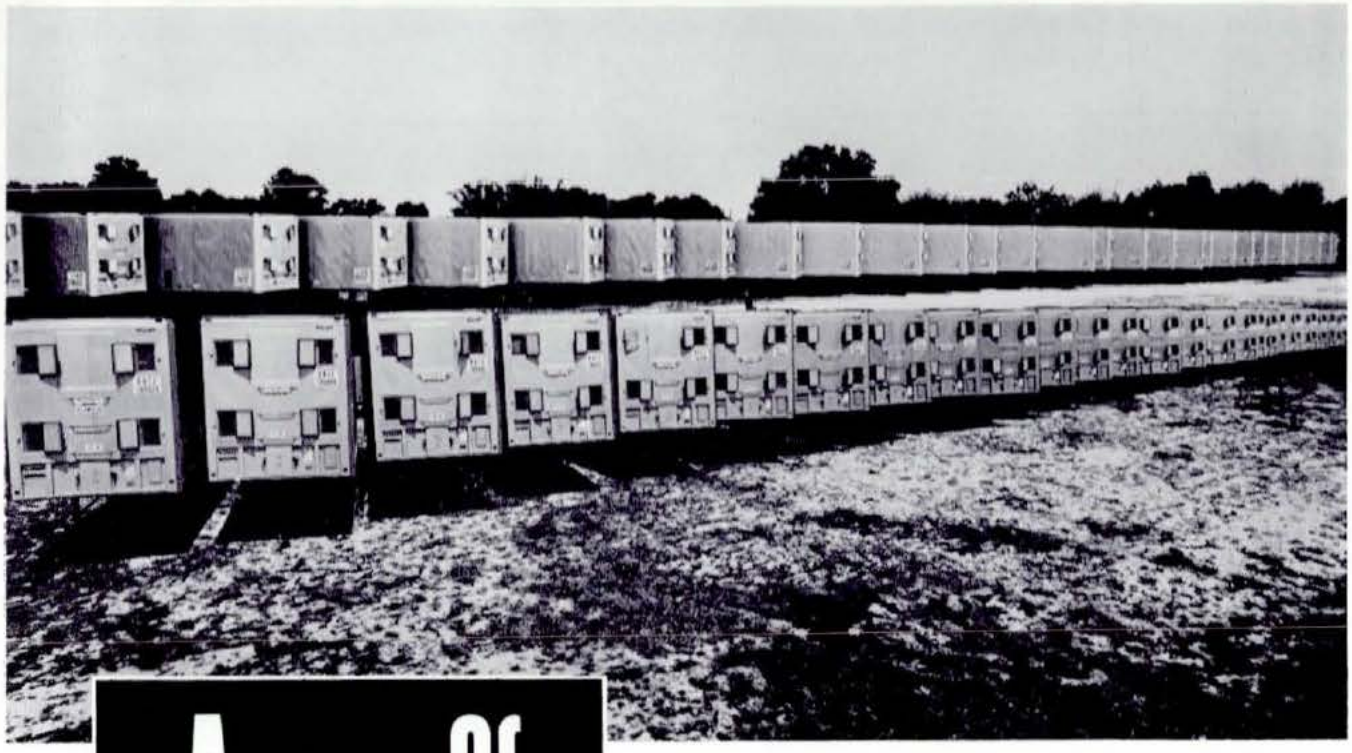

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Muskingum: Test-tube for

If American railroads are ready for a new look at electrification, their studies will probably be based on technology incorporated in Ohio industrial line.

By FRED N. HOUSER
MECHANICAL EDITOR

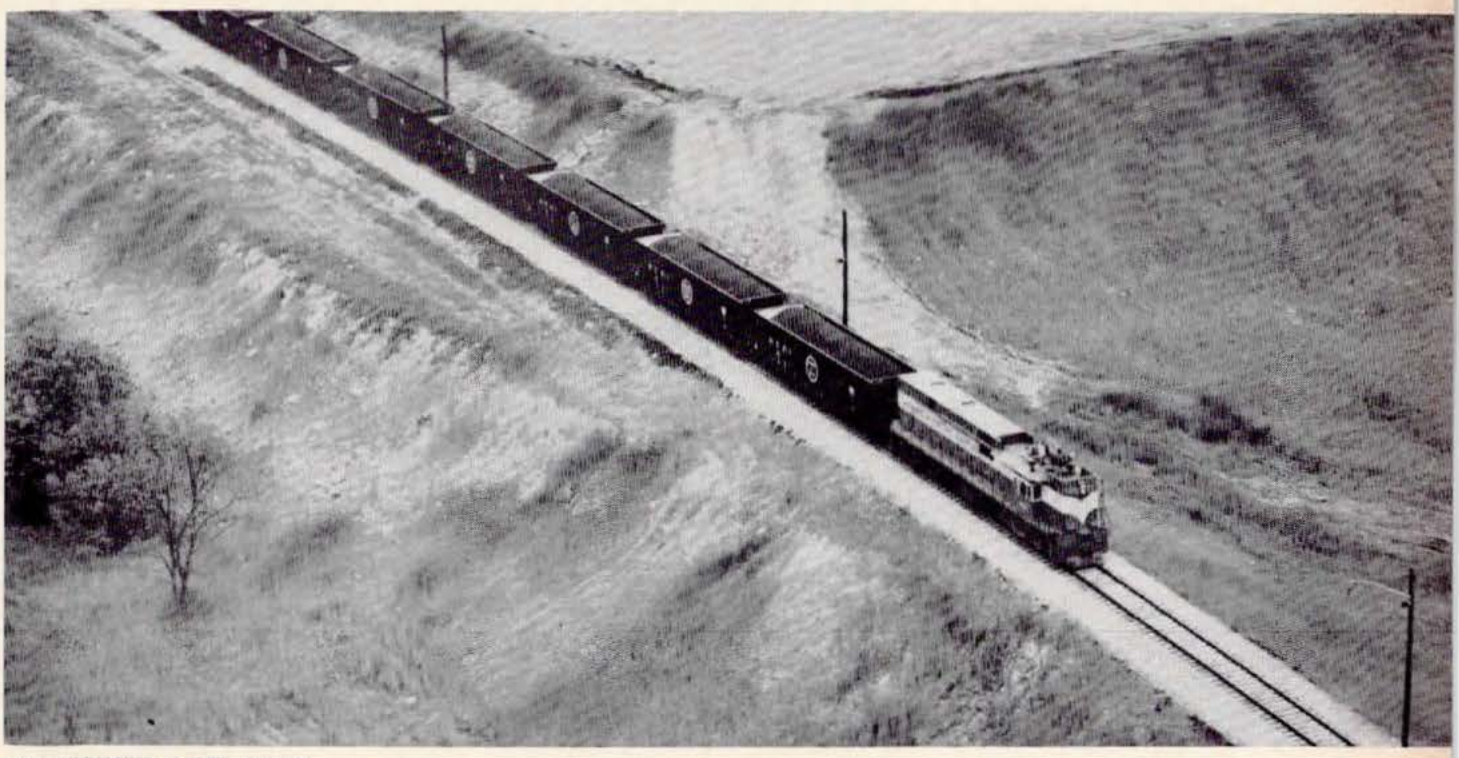
"A showcase of advanced technology for electrification of American railroads," a Federal official called it. "The Muskingum Electric Railroad can deliver larger quantities of coal for our generating station at lower cost than ever before," observed D. C. Cook, president of Ohio Power Co., and its parent firm, American Electric Power.

The occasion was the recent dedication of new $45-million facilities, including the 15½-mile automated electric railroad and the world's largest dragline, at the vast surface mining operation of Central Ohio Coal Co. southeast of Zanesville, Ohio.

Amidst signs of new interest in electrification on the part of American line-haul railroads, it remained for a utility's privately owned coal hauler to introduce into North America the technology which characterizes the rapidly expanding electrifications in other parts of the world.

● **More than financial?** The announcement in Southern Pacific's 1968 annual report that its subsidiary Bankers Leasing group has arranged to acquire the Muskingum Electric Railroad set off some speculation that SP interest could be technical, as well as financial. The Bankers group leases production machinery, materials handling equipment and transportation equipment to many major utility, transportation and industrial corporations.

SP has made little secret of its investigations of electrifying certain of its routes. Three of its mechanical officers jointly delivered a prize winning paper, The Future of Railroad Electrification in the United States, at the 1968 Pan American Railway Congress in Buenos Aires. Any decision to electrify, the Congress was told, would have to recognize that there will be a continuing dieselized operation of considerable proportions.



UNMANNED LINE HAUL
The 2,000-ton train traverses the main line with E50 locomotive responding to speed commands of passive inductors.

future?

● **The century ahead.** At a symposium at the University of Utah during the recent Golden Spike centennial (RA, May 19, p. 12), John C. Kenefick, Union Pacific vice president, operations, looked "to the kind of rail network this nation should have." Motive power, he said, "will see the effect of change" and because "of high speed and control necessary, electrification holds the greatest promise of the future."

Bryce W. Wyman, General Electric vice president and general manager of GE's Transportation Systems Division, has called upon the nation's electric utilities to join with American railroads in studying electrification. At the Electric Utilities Executive Conference earlier this year, he urged utilities to find a way of economically financing the installation of the catenary system —a major deterrent to electrifying main lines.

He explained that many questions

HIGH-SPEED DUMPING
Dumping on conveyor occurs as train traverses 40-foot-high trestle under carrier control. Doors of Ortner 100-ton hoppers respond to wayside controls.

regarding main-line electrification can be answered only by "aggressive, imaginative, cooperative studies between the utilities serving a given railroad and the railroad itself," adding that the "common interests of the two great industries make it likely that solu ions can be found." Wyman concluded that "perhaps 1969 will be the year when a history making group of electric utilities and a history making railroad will announce that they are, in fact, beginning the detailed design on the electrification of a main line."

For several years the Railroad Electrification Committee of the Edison Electric Institute, trade association of the utilities, has been conducting a comprehensive study of the engineering and economic problems of electrifying the Penn Central's New York-Buffalo-Cleveland main line. The length, profile and traffic density of this route were of a type which would produce usable data on general railway electrification, even if the specific project were not implemented. An EEI executive has pointed out that the total capital expense for electrification can be divided roughly into three equal parts—catenary, motive power and system modifications. In the past, railroads have assumed the responsibility for all these. In the future some of the burden of the catenary investment might be shifted to the utilities.

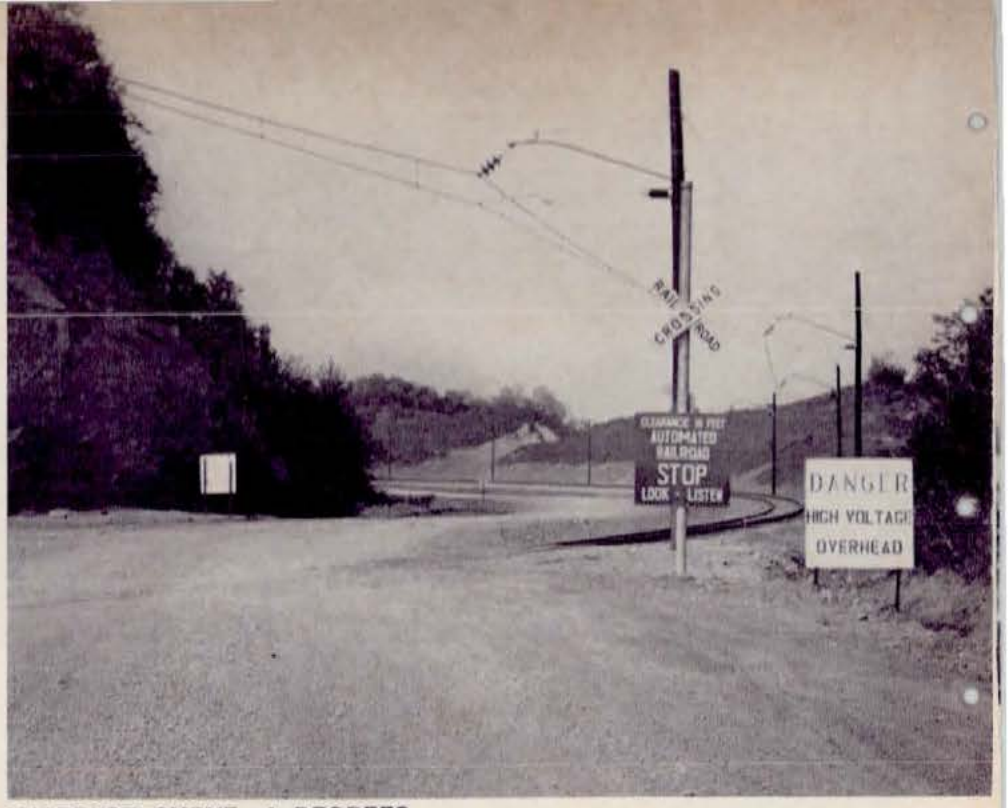
● **Commercial frequency.** In the past, American railroads have always required a special power supply. In addition to the 11,000-volt alternating current of the Penn Central and Reading, there are 600-, 1,500- and 3,000-volt direct-current systems on other U.S. railroads.

All such systems require expensive conversion apparatus, heavy catenary systems and, because of the relatively low voltage, numerous feeder points.

Perfection of rectifiers has made it possible to use d-c traction motors on a locomotive operating under an a-c catenary. The a-c traction motors in use when the New Haven, the Pennsylvania and the Virginian were first electrified could not utilize commercial-frequency (60-cycle) current.

Each of these roads, as a consequence, had to build expensive substations that dropped utility transmission voltage to a practical distribution level (11,000 volts). They also had to incorporate rotary frequency changers to produce 25-cycle traction current from the 60-cycle supply.

● **The picture changes.** Techniques developed primarily in Europe over the past two decades (and used in North America for the first time on the Muskingum Electric), can change this. A high-voltage catenary system need be fed only at a relatively few points (MERR's contact system is supplied only at the substation 4 miles from the line's north end). And the catenary can be of such light wire that low-cost wood poles are adequate for its support.



SHARPEST CURVE: 4 DEGREES

MERR location along private haul roads did minimize cut-and-fill operation, but 5.3 million cubic yards of earth were moved. Steepest grade against loads is 1½%.

The possibility of so-called phase imbalance resulting from a three-phase utility system supplying a large single-phase railroad load was once a matter of concern to power companies. One announced conclusion of the Edison Electric Institute study has been that today's utility networks can handle railway loads without complication, a decision borne out by experience in France and Britain, where commercial-frequency railway electrification is expanding steadily.

K. L. Lawson of the U.S. Department of Transportation has predicted that American railroads are gradually moving to more electrification. Lawson foresees 10% of U.S. Class I routes going under catenary over the next 20 to 30 years. He anticipates, because of their clearances, that eastern routes would duplicate the Muskingum practice, utilizing 25,000-volt a-c. West of the Mississippi, however, where clearances are greater, Lawson would expect 50,000-volt, 60-cycle current to be utilized.

It was 40,000-volt a-c that SP mechanical officers proposed at the Pan American Railway Congress. "The open terrain and operational characteristics of the western railroads particularly favor electrification," it was explained. The absence of restrictive bridges and tunnels is somewhat offset by the sparsity of suitable power supplies in many areas, they warned.

● **Transition period.** If an electrification were implemented, the Railway Congress was told, it might be accompanied by an upgrading of the lines involved to accommodate heavier traffic and higher speeds. Catenary and substation installations would have to be coordinated with the utilities. Modification of existing terminals and yards would be necessary, enginehouses, repair shops and other facilities would have to be altered. Some modification could be necessary in diesel facilities serving secondary lines. The entire signaling and communications system would have to be surveyed and changed if necessary.

None of these alterations would be cheap. Railroading, an industry which has always been capital intensive and, in modern times, has been perennially capital short, would require an extremely critical evaluation of the benefits and financial implications. It does appear that many of the factors which in the past have tended to discourage railroad electrification are now much less applicable. The SP mechanical officers concluded: "Commercial electrification has a definite and highly important place in the future of the U.S. railroad system. The time for serious evaluation of its potential is now, and not tomorrow."

● **Capital intensive.** One of the very factors which has deterred consideration of main-line electrification was decisive in American Electric

Power's choice of a fully automated electric railroad. Coal, presently at the rate of 18,000 tons per day, is trucked over private haulage roads to the loading facility on the loop at the north end of the Muskingum Electric's 15-mile route. Two trains move to a 4½-mile conveyor feeding the power station.

AEP's mining subsidiary could have moved three ways. The conveyor system could have been extended—and simultaneously would have had to have its capacity raised. The first decision was that the conveyor system would stay as it was; capital and operating costs of an extension were too high

This left the decision between truck and rail. Explains John Tillinghast, executive vice president of American Electric Power Service Corp.: "Our decision to build the railroad was based not only on the lower cost, but the fact that about 75% of the total railroad cost is fixed capital costs and the 25% that remains can be fairly accurately determined. On the other hand, operating costs for the truck haul account for more than 75% of the total, so that higher-than-estimated operating labor costs would significantly increase total costs."

Once the decision had been made for an electric industrial railroad, it opened an opportunity to develop techniques of catenary construction and automatic train operation (RA, Nov. 11, 1968, p. 20). Ohio Brass Co. and AEP have developed costs on the lighter catenary construction made possible by the high voltage system.

General Electric supplied the pair of 5,000-hp E50 rectifier locomotives (RA, Aug. 5, 1968, p. 24), the automation equipment, and the 7,500-kva substation which drops Ohio Power's 138,000-volt transmission voltage to 25,000 volts for the Muskingum trains. Ortner Freight Car delivered 32 of the patented Rapid Discharge hopper cars —3,650-cubic-foot models with completely automated operation of their five pairs of drop doors.

● **Basic cycle.** The basic cycle for handling 18,000 tons of coal daily requires each of the 15-car trains to make six round trips on a two-shift basis. Loading takes 30 minutes. Once clear of the loading area, the unmanned train moves to the unloading terminal at a top speed of 35 mph, the 15-mile trip requiring 35 minutes. Unloading takes 10 minutes and the return trip to the loading area 30 minutes.

Following his reference at the recent dedication of MERR as "a showcase of advanced technology," James R. Smith, U.S. assistant secretary of interior for water and power, expressed a hope that such advances would be used to "help solve some of the transportation problems the nation faces." ■

FRANK MALONE

WATCHING WASHINGTON

ARE YOU LOOKING for proof of Capitol Hill concern about the future of rail passenger service? You may find it in the bi-partisan sponsorship of a rail-related bill in the Senate last week. Gordon Allott (R-Colo.) introduced a proposal for a six-month look at the potential of railroads for moving people and mail, especially over existing lines. The Transportation Secretary would make the study. The bill had 26 co-sponsors, 13 from each party, at RA press time. Among them were Republicans Strom Thurmond (S.C.), John Sherman Cooper (Ky.), Peter H. Dominick (Colo.), and Charles Percy (Ill.), and Democrats Ralph W. Yarborough (Tex.), Joseph D. Tydings (Md.), Claiborne Pell (R.I.), Alan Cranston (Calif.), Gaylord Nelson (Wis.), and Abraham A. Ribicoff (Conn.).

THE SENATORS believe that: (1) expressways and interstate highways in major urban areas can't take much more traffic; (2) air congestion has reached crisis, national-concern proportions; (3) large rural areas soon will completely lack rail passenger service; and (4) "the railroads, despite financial problems, *can play a vital role in solving our ground transportation problems*" (italics added). A Congressional rail credo or not?

THE RAIL POTENTIAL, Senators say, might be pursued through regional transport commissions, a government-industry public corporation, or direct assistance to the railroads. The Secretary's investigation also should find out: (1) how Northeast Corridor technology can be applied elsewhere; (2) whether Federal aid can go for developing regional rail passenger services, for furnishing a passenger-car pool and modern terminals, and for experimenting with fare structures and the type and frequency of service; (3) how containerized mail can be coordinated with existing or future passenger schedules to insure both fast mail service and preservation of needed passenger routes; (4) how work rules can be changed to promote passenger service improvement; (5) and where research and development should be concentrated, especially in regard to equipment, maintenance, right of way, and power supply.

A FINAL PROVISION prohibits abandonment or sale of passenger facilities until the study is finished. Allott's bill has gone to the Senate subcommittee on surface transportation. Four of the co-sponsors are subcommittee members.

ZERO in on SAFETY

ATSF safety program gets big results

Road's new reporting system shows quickly where the trouble spots may be developing.

KICKOFF FOR SAFETY CAMPAIGN came in series of meetings addressed by Santa Fe President John S. Reed (at rostrum), and Vice President-Operations Larry Cena.

Safety is contagious. And, as Santa Fe is finding out, it can be contagious in more ways than one.

With a new program conceived in 1968 and put in operation early this year, Santa Fe is achieving a 35% improvement in safety performance based on the index of reportable personal injuries.

At the same time, two other measures of safe operation—derailments and freight loss and damage—are showing trends that almost exactly match the personal-injury improvement. It's hard to prove a direct cause-and-effect link—but Santa Fe people are convinced it's there.

Vice President-Operations Larry Cena puts it this way: "Good safety practices convert into other good practices. We're getting a greatly increased interest in safety in that key area of personal injuries; we're getting an improvement in the record and we're seeing it translated into improvements spreading out into other areas."

● **Study leads to action.** Santa Fe's new safety drive was triggered last year when Cena and his assistant, R. E. McMillan, took a close look at the performance figures—and compared them with Santa Fe performance of past years.

Back around 1959-60, Cena recalls, Santa Fe ranked consistently in the top three in safety among western roads. By the late 60's, however, this was no longer true. The obvious question was, Why?

Cena's first move was to start digging out the facts behind the figures. He put a young civil engineer, J. M. McMillan (no relation to R. E. McMillan) on a system tour, with one assignment: Talk to people, find out what they think about safety and, as Bob McMillan phrases it, "bring it back with the bark off."

The young engineer did just that. Says Cena: "It was bad news." The reports from the field reflected something which, says McMillan, "gave us a great temptation to alibi. Believe me, we didn't give in to that temptation."

● **New approach needed.** In a nutshell, what the reports indicated was that gradually, somewhere along the line and despite the perpetuation of the safety program that Santa Fe management stressed for many years, the men had settled into what appeared to be somewhat of a "routine" feeling about safety. It was obvious that a more imaginative and dynamic approach was needed. "We set out to change our approach and re-emphasize management's interest in safety on a day-to-day basis, to drive home the point that every officer on the railroad, from the president right on down, continues to be concerned," Cena says.

Cena and McMillan started planning, and came up with two proposals. One wasn't adopted. It would have abolished the safety department as such and made safety the direct responsibility of division and shop officers. The second proposal looked better, and it's the one Santa Fe is carrying out. Through this plan, the safety department has been enlarged and realigned. Before, safety supervisors' territories didn't coincide with divisional or shop lines and an antiquated reporting system made it hard to determine just where safety problems existed. Now, a supervisor is assigned to each division and each major shop, and the reporting system has been revised so that top management can pinpoint problem areas on almost a realtime basis.

By Jan. 1 of this year, Santa Fe was ready to move. As a starter, Grand Division safety meetings were scheduled, for the Eastern, Western and Coast Lines. Top supervisors attended. Larry Cena ran the meetings. He laid it right on the line to the divisional people: "Each of you is an accident-prevention officer. You have the direct aid of your safety supervisor, but the responsibility is yours, and you will be held accountable." Santa Fe President John S. Reed appeared at each of the sessions. He gave the full backing of very-top management to the program.

● **The word gets out.** From that point, the supervisors went back home to spread the word. Safety meetings were held separately at a half-dozen levels of supervision. At each meeting,

supervisors heard the word from their immediate boss—and from the boss's boss. Says Larry Cena: "We got the message to every man on the railroad."

The program could have ended there, with an impressive effort—realignment and expansion of the department, improvement of the reporting system, meetings all over the railroad. Santa Fe, however, added the final touch—a follow-up system which should remove any lingering doubt, in the field, about top management's determination to post a better safety record.

The follow-up works simply: When a reportable injury comes in, somebody from Chicago is on the phone to the injured man's supervisor. He wants to know what happened, and why. Santa Fe has, in the Operating Department in Chicago, about a half dozen men who, among them, know just about every supervisor on the railroad. So, when a track foreman gets a call about an injury from an old acquaintance—who happens to be the vice president-operations—he gets the idea that Santa Fe means business. "It shakes them up a bit," Bob McMillan observes.

● **Figures tell the story.** However line management has been "shaken up," it's paying off in the figures.

In the first four months of 1968, Santa Fe had 380 reportable injuries, including four fatalities. The road posted a less-than-admirable ratio of 15.26 injuries per million man-hours worked.

In the first four months of 1969 Santa Fe had 238 reportable injuries, and no fatalities. It posted a greatly improved ratio—10.23 injuries per million man-hours.

More important, there's a month-by-month betterment. In January, with the program just under way, 1969 showed 81 injuries, down from 92 last year. In February it was 55 injuries this year, 87 last year. In March it was 56 injuries this year, 104 last year. And in April it was 46 reportables this year, 97 last year.

For the Operating Department—where most accidents occur—the improvement-rate surpasses that of the railroad as a whole. In March 1968, for example, the department reported 76 injuries and a 21.20 ratio. The comparable figures for March 1969 were 33 and 10.27. April's totals last year were 72 injuries and a 19.86 ratio. April's totals this year were 33 injuries and a ratio below 10, at 9.35.

"We're very pleased with this improvement, but that doesn't mean we're satisfied," is the way Larry Cena describes the results so far. "We're never going to be satisfied as long as any of our people are getting hurt. We're planning to go right on emphasizing safety every day until we completely eliminate personal injuries on the Santa Fe."

● **Interest builds up.** Over-all, Santa Fe people are continuing to make sure that everybody concerned with safety—which means everybody—stays alert. Employees are encouraged to come up with new ideas. And if an idea won't work, the employee is told why it won't work. Employees are responding. Several trainmen, for example, have voluntarily taken a day off to come to Chicago to sit down with Cena or other top operating people to talk safety. Santa Fe, too, is responding. One suggestion that came from the field involved replacement of rotted window frames in a shop building. Safety people checked the record and found not a single accident attributable to rotted window frames. But the road went ahead anyway and replaced the window frames. "It's a matter of good housekeeping," says Cena, "and that's another thing that helps to make people think safety."

At the same time, management is making sure that its safety supervisors stay on their toes. Earlier this year, Topeka Shop was having safety problems. Five safety men were brought in from other shops. In a week, they covered the entire Topeka operation. Again, it may be difficult to measure a direct cause-and-effect—but Topeka Shop went through April without a single reportable injury. "Our men know that if they need help, we'll send help," McMillan point out. "They also know that if this happens too often, we'll make changes."

● **A matter of "communication."** As matters stand now, Cena and McMillan are smiling, with their fingers crossed. But deep down, they are convinced that the program is and will be effective. And most of the credit goes to improved communication— the sure knowledge, in the ranks, that the brass in Chicago really does care.

Top-to-bottom "communication" of this kind has its advantages, Larry Cena says: "Years ago, when Fred Gurley—he was president then—started carrying a camera around the property, it was amazing how many other people started showing up with cameras. Well, the same thing works with safety. We're interested—they're interested." ■

J. T. **GROUNDWATER,** superintendent of Santa Fe's Los Angeles Terminal division, makes up "safety train," symbol of improvement.

"Safety trains" replace traditional trophies

Competition can be an extra-added motivating factor in a safety program. And so, many roads provide some sort of competitive atmosphere—often with a trophy going to the division or shop with the best safety record at the end of a year.

Santa Fe used to do something like that—but no more. Now, Santa Fe safety "trophies" go out on a monthly basis. And they're just a bit different from the usual loving cup.

At the beginning of the year, each general manager, division superintendent and shop superintendent was given an HO-gauge model of a diesel-electric road-switcher. For each month his group betters the previous year's safety record, he gets a freight car to couple on. If, at the end of the year, he can display a diesel and 12 cars, he gets the caboose. Consistent improvement, in other words, is a 12-car train with power and with crew-quarters.

The idea, Santa Fe people say, caught on well with the general managers and the superintendents. But somebody realized that perhaps there ought to be something more of a goad. And so it is that these supervisors will soon be getting a car for their trains even when their safety performance shows up worse than last year's.

There's only one difference: For a month's record that slips below last year's, they'll get an HO freight car—clearly marked "bad order."

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Superintendents: Laying the problems on the line

The Superintendents, meeting in Washington this week, will try to come to grips with some major questions confronting the industry.

In its long and illustrious history, dating back to the 19th Century, the American Association of Railroad Superintendents has met in such places as Mexico City and Put-in-Bay, Ohio, as well as in most of the nation's major railroad centers. This year, for the first time, AARS is going where an increasing amount of railroad-industry activity is being concentrated—Washington, D. C. And for anybody who thinks the railroads aren't going anywhere, a look-in at the association's three-day meeting might be an enlightening experience.

AARS discussion sessions are usually free-swinging. This week (June 17-19), superintendents will be unwinding two of the biggest problems facing operating officers today: Coping with the computer, and improving terminal performance. They'll also be taking a look at inter-railroad cooperation, at unit-train operations, and at grade-crossing accident-prevention problems. And they'll be hearing from two old friends—J. P. Hiltz, Jr., former president of Delaware & Hudson and now chairman of the National Railway Labor Conference; and R. N. Whitman, former general manager-Lines East of Great Northern and now Federal Railroad Administrator in the Department of Transportation.

Advance work by AARS committees will give operating men a running start into their discussions—with pre-meeting reports that lay problems on the line, and suggest a few proposals for solution.

• **The "computer gap."** In the computer area, for instance, a survey of operating officers indicates that "the biggest gap between the computer and the superintendent is the lack of understanding by the superintendent of the capabilities, applications and cost/effectiveness of electronic data processing."

In the survey, a group headed by A. T. Kearney & Co. Associate R. H. Leilich found "a distinct need for systems engineers and designers to communicate more effectively with railroad operating personnel, and vice versa. All too often, failure to communicate results in computer utilization being measured by machine time and paper output, rather than by the cost/effectiveness such time and paper produces."

Realtime systems wanted

Leilich's committee also makes a strong pitch for the identification of data-system users and for development of true, realtime systems: "The problem is not one of information but of providing the right information to the right people. There is a need to identify the people—that is, the level in the company—to which realtime information must be routed. This means that more attention must be given to building an operating system as apposed to the present fad of 'management information' systems. Rather than provide the superintendent with just 'day-after' or 'Monday-morning quarterback reports. . . it would be far better to use the computer to monitor realtime status and make projections. In this way, terminal supervisory personnel under the superintendent would be furnished with information to help them to more effectively make decisions before actual moves are made. In this way, many problems revealed by after-the-fact analysis could be prevented."

• **How to use the computer.** Application of computer technology to terminal problems, the committee believes, might work this way:

"The furnishing of advance information to the computer is the first major ingredient in placing a terminal in the initial phase of efficient operational planning. . .

"Following the receipt of advance information—with information added concerning transfers, locals and industrial switchers—data must be converted for use by yard supervisors prior to, or as soon as possible after, receipt of traffic. It is at this point that a PICL [perpetual location of car inventory] system is mandatory and accuracy is essential. . .

"On the basis of this information, the approximate scheduling of train departures or transfers can be made—including the calling for second sections of symbol trains, cancelling or combining of symbols or planning for extras. . . .

"After midnight, the computer could furnish data on cars missing per diem, missing connections or delayed beyond certain pre-determined standards. Other summaries incidental to yard status could include information on cars for locals and local industries, industry releases, cleaning and rip-track releases, bad orders for the rip track, cars to be cleaned, and classification of non-distributed empties available for loading.

"Knowing at a glance the summarized condition of the yard and of traffic en route, local supervision would be in a position to notice or anticipate deteriorating situations and correct them before they become abnormal exceptions and a red-flagged statistic on the superintendent's or general manager's desk the following morning."

• **Cooperation: It's vital.** Leilich's group—along with a committee headed by R. W. Chapin, vice president, St. Mary's Railroad—also looks long and hard at the problems of interline cooperation as they involve the superintendent. And Leilich's committee observes that "the superintendent is the unwitting victim of the fact that too frequently in our industry the commitment to serve does not extend throughout. This is brought about by a lack of understanding of the importance and significance of the interdependence of railroads as an industry. We fail to realize that there are no longer 'com-

INDUSTRY UNITY

"We fail to realize that there are no longer 'company' problems—or, to put it another way, that all company problems are industry problems. One railroad cannot be an island of prosperity in an industry of weakness."

TERMINALS

"Terminal people are so traditionally bound to the holy writ of measuring performance against cars-handled-per-engine-hour that when you begin to set standards that are meaningful—to measure performance by methods and figures that can't be juggled—you just plain have a selling job."

HUMP YARDS

"Hump yards are still not perfected, nor have we applied all the machinery or techniques available to optimize performance in these hump yards. Especially, design leaves much to be desired—and we continue to use techniques and methods used by our pioneer railroad operators."

MODERNIZATION

"Railroads have now spent billions in the past two decades for modernizing their plants. Most of these dollars have been spent defensively, but they have been spent. It is our responsibility now to devise and use new techniques for the control of performance in our most unproductive area—our terminals."

pany' problems—or, to put it another way, that all company problems are industry problems. One railroad cannot be an island of prosperity in an industry of weakness."

In the data-processing area, the committee expresses belief that railroads "are all too competitive, with their pride in developing ideas and making changes —and they do not deliberately seek an opportunity to share these savings with connecting lines, even at a profit. At the same time, connecting lines do not ask, nor in most cases seek, EDP information from other roads. There is distrust of accuracy, dependability and timeliness—to the extent that railroads prefer, at great expense, to generate their own information for computer input, a great deal of the time from computer-printed information given to them. How much better sense it would make to receive data and add, delete, revise and edit with the assistance of the receiving road's own machines, rather than to reconstruct data in its entirety."

• **Standards and design.** Another committee dealing with terminal problems was headed by J. B. Norwood, Jr., Rio Grande's director of service planning and quality control. Its job was to dig into the specifics of terminal operation as they relate to service quality—and committee members came up with a series of observations on both terminal standards and terminal design.

Resistance encountered

Discussion of standards, Norwood's group says, almost always runs into "reluctance, even resistance. Terminal people are so traditionally bound to the holy writ of measuring performance against cars-handled-per-engine-hour that when you begin to set standards that are meaningful—to measure performance by methods and figures that can't be juggled—you just plain have a selling job to do."

For traffic purposes, the committee notes, standards must be "definitely time-oriented and rigidly quality-controlled to produce service the customer can use and afford. The result will be disciplined movement of freight. . . . Time-in-transit will become increasingly more important. . . . Any deadtime will be challenged."

• **Weaknesses spelled out.** In the area of yard layout, Norwood's group sees need for "advanced designs and techniques for high-volume flat yards. Hump yards are still not perfected, nor have we applied all the machinery or techniques available to optimize performance in these hump yards. Especially, design leaves much to be desired —and we continue to use techniques and methods used by our pioneer railroad operators.

"The big weakness of most contemporary yard designs is in train make-up and dispatch. Our bowl designs still make it necessary when reassembling blocks into trains to make multiple moves to reach, pull, double and place cuts on departure tracks. Such designs tend to limit the number of trains that can be made up simultaneously. The operation is slow and costly, in time and money."

In new-yard development, the committee sets up five major points on which determinations must be made:

—Expected volume of traffic, with projections covering five-, 10- and 15-year periods.

—Expected changes in commodity patterns, with similar projections.

—The site itself, with provision for expansion.

—Design, with emphasis on the extent of automation to be applied for control and accounting purposes.

—The supervisory structure, which should be built "for new concepts and new horizons, and definitely not be one that is still the same old jalopy in a new coat of paint."

• **New techniques needed.** Norwood's group sums up its study this way: "We recognize that railroads have spent billions in the past two decades for modernizing their plants. Most of these dollars have been spent defensively, but they have been spent. It is our responsibility now to devise and use new techniques for the control of performance in our most unproductive area —our terminals."

In addition to the computer, terminal performance and inter-road cooperation studies, other AARS reports are scheduled for presention on unit-train pros and cons and on the industry and public aspects of grade-crossing protection. C. J. Taylor, director-economic research and cost control, Rock Island, heads the group reporting on unit trains; J. L. Willett, rules examiner, Gulf, Mobile & Ohio, will lead the grade-crossing discussion. ■

Flood preparation paid off

This year's defensive steps cost about $350,000, compared with $3.5 million damage in 1965.

By MERWIN H. DICK
ENGINEERING EDITOR

Flood disasters make headlines. The greater the disaster the bigger the headline. This story is about a flood—a near-record flood—that didn't cause a disaster—at least on the railroads. And that can be a headline, too.

The story lies in the fact that the flood found the railroads prepared with defenses calculated to blunt the attack. And that's exactly what they did, with ensuing important savings.

The experience of the Burlington provides an example of how the defense strategy was applied and the results that accrued from it: An expenditure of several hundred thousands dollars prevented losses that probably would have run into millions.

The story had its beginnings early in March when the U.S. Weather Bureau predicted that high water this spring in the upper Mississippi River valley would reach the highest levels on record. To officers of railroads with lines in a position to be damaged by flood waters in the upper Mississippi, this prediction meant the possibility of serious trouble. The disaster wrought by the 1965 flood, the worst on record, was still fresh in their minds.

To forestall a repetition of the 1965 debacle, every railroad with properties in the path of the predicted flood waters undertook a preparedness program (RA, April 14, p. 13). These include, in addition to the Burlington, the Milwaukee, North Western, Northern Pacific, Great Northern, Soo Line, Green Bay & Western, Illinois Central and Rock Island.

The Burlington has extensive properties in the upper Mississippi valley, including several hundred miles of lines extending along the river between St. Paul and St. Louis. Crossings of the river are made at Winona, Minn. (joint with the Green Bay & Western), Rock Island, Ill., Burlington, Iowa, Quincy, Ill., and Alton, Ill.

Preparation of the Burlington's plan of defense against the predicted floods was ordered by Ivan Ethington, operating vice president. In the absence of Chief Engineer D. V. Sartore, who at the time was taking an advanced management training course at Harvard University, development and implementation of the plan was directed by C. J. Bryan, assistant chief engineer.

● **Plan objectives.** In mapping their flood defenses, Burlington engineers had several objectives. One was to minimize damage to the properties, such as washing of the embankments and tracks. Another was to keep the road operating as long as possible and then to hold the out-of-service time to a minimum if it should become necessary to stop operation.

By March 1 a plan of action had been drawn up. A key feature was heavy reliance on riprap and sandbags. The plan called for placing more than 1,000 cars of riprap on embankments and shoulders as protection from wave and current action. About 75,000 sandbags were placed in constructing flood-control dikes and for protecting key structures.

Additional precautions

Other steps called for included removal of switch machines in danger of being damaged by high water and loading them into cars for movement to higher ground. Where signal wells appeared to be in danger of being flooded the batteries were to be removed and the wells loaded down with sandbags to keep them in position. Also, local forces were instructed to keep underground storage tanks fully loaded to prevent them from being "blown" out of the ground by hydrostatic pressure if flooding occurred.

● **Flood on schedule.** The flood waters arrived as predicted and on schedule. At St. Paul the river crested on April 16. The highest stage reached there, according to the U.S. Corps of Engineers, was 24.5 feet, compared with a crest of 26.0 feet in 1965. As the crest moved downstream the flood stages reached were also slightly below those attained in 1965. But the Corps of Engineers said the 1969 flood was still the third worst on record. (The 1965 flood holds the all-time record, and one that took place in 1897 is in second place.)

At any rate the crests were sufficiently high to produce an effective testing of the precautionary measures the Burlington had put into effect. And, according to Burlington engineers, the results proved the wisdom and effectiveness of the flood-control program. Dramatic evidence that the battle was won by the railroad is given by a simple comparison. The 1965 flood caused damage amounting to $3,500,000 to the road's properties on the upper Mississippi. The cost this year was about $350,000, most of which went for the preventive measures.

● **Protecting a yard.** The way in which the defensive steps taken by the road were effective in protecting against flood damage is shown by the experience at specific locations. One of these is Dayton's Bluff yard in St. Paul. This yard, which lies on the east bank of the Mississippi River, was the scene of considerable trouble and damage during the 1965 flood. Water, entering the yard at a low point at the north end, caused considerable washing in 1965 as it flowed southward through the yard. Another source of trouble was the deposit on the tracks by the receding flood waters of large amounts of peat moss and other types of debris.

One of the defensive steps taken this year was the building of a sandbag dike across the north end of the yard. The dike was built in cooperation with the Milwaukee which also has tracks at this location. Openings were left for individual tracks with the thought that they would be plugged if flooding became inevitable. Also, to keep peat moss and other debris from floating onto the yard if flooding developed, about 2,000 feet of farm fence was built along the east side of the yard.

As expected, flooding occurred this year at the north end of the yard and the gaps in the dike were plugged. This was effective in preventing water from flowing southward through the yard, as it did in 1965. At the south end of the yard this year some water worked its way into the yard through drainage boxes. But this was "quiet" water that did not result in any washing action. Burlington engineers also say the farm fence was effective in keeping debris out of the yard.

● **Avoiding a washout.** From a flood standpoint, several critical locations are near Hastings, Wis., 17 miles south of St. Paul. One of these is created by a government dam that extends across the

for the CB&Q

SANDBAG DIKE HELPS . . .
Dike thrown across Burlington and Milwaukee Road tracks was designed to prevent a washout as flood waters rose.

. . . NO DAMAGE AT ALL
Dike serves its purpose by stopping water from flowing around end of dam. Water receded without doing any damage.

river at a point where the Burlington and Milwaukee each have a main-line track close to the east bank of the river. Here there is danger that water building up behind the dam will flow around its east end, washing out the tracks. As a defense measure the two roads built a sandbag dike across the tracks, tying into the dam at one end and a rock bluff at the other. Again, openings were left for the tracks.

When it became necessary to close Dayton's Bluff yard on April 12 the openings in the dike at the government dam were plugged. It wasn't long before the water rose high enough to back up behind the dike, covering the tracks. But again this was quiet water that caused no damage. Without the sandbag dike, Burlington officers were convinced, the tracks would have been in danger of suffering thousands of dollars of damage at this location.

● **A troublesome location.** Experience at a location just south of Winona provides another illustration of the effectiveness of the protective measures as well as of having an organization in the field geared to quick action when necessary. This is a stretch where the track is situated on an embankment between the east bank of the river and a rock bluff. The area is particularly difficult to protect, say Burlington engineers, as there are about 25,000 acres of low land on the bluff side, requiring that the railroad roadbed act as a dam having a height up to 28 feet. As part of the preparatory work, riprap had been dumped along the river side of the embankment at problem areas in this locality.

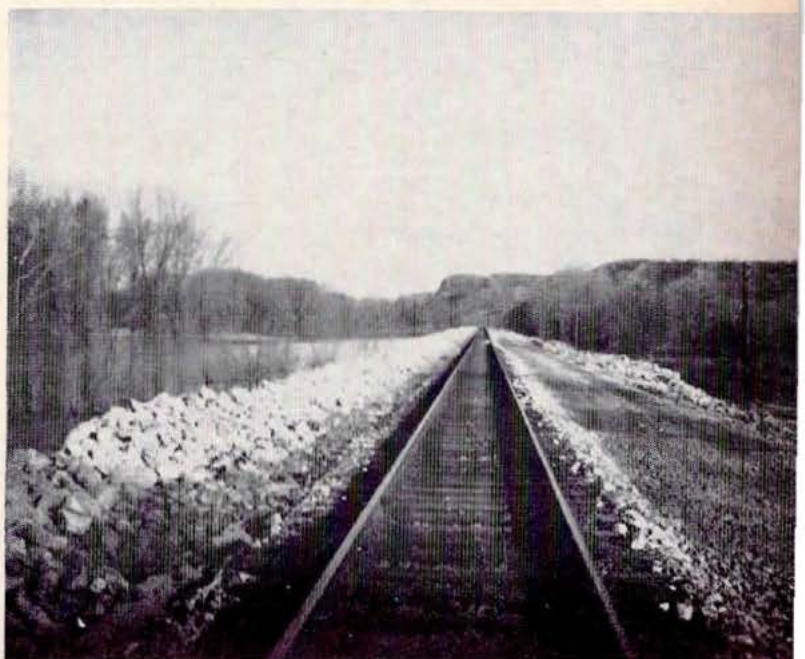
During the April flood the water got up to the bottoms of the ties throughout a two-mile stretch in this area. At that level it was flowing through the ballast section and there was also some seepage through the embankment. This created the possibility of washing on the bluff side of the embankment. There was also danger of sand boils and "blow-outs" developing on that side.

● **Watching the track.** As a further protective measure sandbags were placed on the embankment slope on the bluff side during the flood. Also, a system of walking patrols was put into effect, which was backed up by an organization of men and material designed to go into action quickly if threatening conditions developed. Each patrolman was equipped with a walkie-talkie and assigned 1,000 to 1,200 feet of dump.

The patrols were instructed to watch

(Continued on page 40)

FOUR YEARS AGO . . .
The Burlington sustained this 2,000-foot-long washout in April 1965. Site is south of Winona, Wis.



. . . AND IN APRIL 1969
At same location, thanks to riprap, sandbags and other measures, roadbed remained intact this year.

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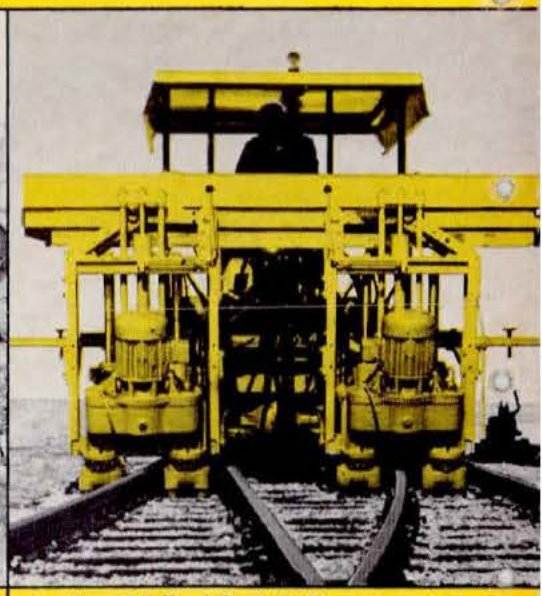

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Circle 10 on coupon page 31

L&N and UTU reach "final agreement" on crew consist

Just a few months ago, Louisville & Nashville was operating 549 crew assignments on a one-and-one basis—one conductor and one brakeman or switchman. Now, in "full, final and complete settlement" of its crew-consist dispute with the United Transportation Union, L&N has agreed that all road and yard crews will be operated on a one-and-two basis—with a few specific exceptions. A joint statement by L&N President W. H. Kendall and UTU Vice President J. P. Saunders outlines the agreement this way: "The railroad has agreed that all road crews will consist of not less than two trainmen and a conductor and all yard crews will consist of not less than a foreman and two switchmen except where specific agreements have been reached to use crews with only one trainman or switchman. Agreed-upon exceptions to the three-man crew rule include eight road crews and 45 yard crews. The union had agreed that trainmen who are provided with portable radios will use them in conformity with rules and instructions of the company and the Federal Communications Commission. An extra pay allowance of $1.50 a trip or tour of duty will be extended to all trainmen for use of radio sets and the allowance for coupling air hose will be increased from 40 to 65 cents for each shift worked." L&N is to begin immediately to accept and process applicants for the additional positions which must be filled. This task is to be completed by Dec. 1.

Final agreement on crew consist follows the working out of an interim agreement which became effective last Feb. 6. In that earlier pact, L&N agreed to add a third man to half of the 549 crews being worked one-and-one; and company and union were to begin a study of the remaining assignments to determine which of them might be continued one-and-one. Crew consist has been an open issue on L&N since 1965, first with the Brotherhood of Railroad Trainmen and with the UTU since it was formed through merger of the BRT and three other operating unions. L&N was hit twice by strikes—before and after an emergency board heard the dispute. Now, there's settlement—which, Kendall and Saunders say, "will permit management and employees of the L&N to move forward harmoniously in efforts to provide safe and increasingly efficient rail transportation services."

DIVIDENDS DECLARED

ILLINOIS CENTRAL.—$3.50, Preferred, 87½¢, quarterly, payable July 1 to holders of record June 3.

LOUISVILLE & NASHVILLE.—$1, quarterly, payable June 16 to holders of record May 29.

MISSOURI PACIFIC.—Class A, $1.25, quarterly, payable June 30 to holders of record June 20.

PENN CENTRAL.—60¢, quarterly, payable June 20 to holders of record May 26.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% Preferred, $1.75, quarterly, paid June 2 to holders of record May 20.

ST. LOUIS-SAN FRANCISCO.—60¢, increased, quarterly, payable June 16 to holders of record June 2.

SEABOARD COAST LINE.—55¢, quarterly, payable June 30 to holders of record June 16.

SOUTHERN.—70¢, quarterly, payable June 16 to holders of record May 15.

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BID ANNOUNCEMENT

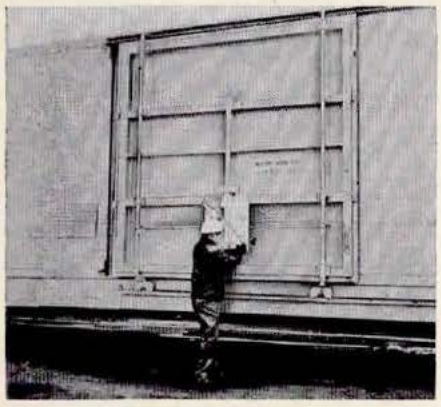
Notice is hereby given for invitation to bid on 130 electric commuter cars to be constructed under project grant No. ILL-UTG-7 of the Urban Mass Transportation Administration for operation on the Illinois Central Railroad. Copies of bid documents and specifications may be obtained at a cost of $100 each by writing the undersigned.

Bid proposals will be received by mail until August 5, 1969 or may be delivered in person for formal opening at 8 p.m., August 6, 1969 at regular meeting of the District at City Hall, Harvey, Illinois.

Right to accept most advantageous proposal, to wave informalities on, or to reject any or all proposals, is reserved.

Signed: Chicago South Suburban
Mass Transit District
Post Office Box 296, Olympia Fields,
Illinois 60461

NEW PRODUCTS REPORT



Plug door (RA-1)

A Superior plug door with Magi-Cam operating mechanism is said to make opening and closing easy, one-man operations. Magi-Cam consists of a computer-designed timing plate and linkage by which opening and closing sequences are programmed automatically. The first 90-deg turn of the handle releases five locking bars from their seats in the door frame. Another 180-deg turn cams the plug door out of the opening. Closing is similarly controlled. The sequential timing concept prevents doors from either opening or closing unexpectedly. The new door may be built in any height, width or thickness and can be paired for double-width openings. *Chicago Railway Equipment Division.*

Drag detector (RA-2)

Model 4000 dragging-equipment detector can also be equipped with a loose-wheel detector (model 4000-10). Both units are bidirectional in operation and self-restoring. The dragging-equipment-detector portion is made up of separate panels which are self-restoring. The loose-wheel detector feature, which is a vertical stainless steel unit with a detector head contact, will respond at any train speed from zero to more than 150 mph. *Erico Electronics.*

Data sets (RA-3)

A new low-speed data transmission system has plug-in filters to provide a wide choice of channel spacings and related data speeds—from 120 Hertz for 75 bits per second to 1020 Hertz for 600 bits per second. The new system, the 25B, will operate over cable, open wire and microwave/multiplex systems, microwave supervisory channels or over physical voice frequency circuits. The system can be arranged for either two- or four-wire circuits. *Lenkurt Electric Co. Inc.*

Flange detector (RA-4)

Model 4040 wheel-flange detector comprises a self-generating inductive pickup plus electronic circuitry to interpret that the generated voltage is linear in relation to the speed and proximity of a wheel above the detector. The unit will detect passage of wheels at speeds from ½ to over 200 miles per hour. The output of the detector can be selected for positive relay control or input to high speed computers. *Erico Electronics div. of Erico Products Inc.*

Switch heaters (RA-6)

A new line of gas-fired switch heaters has three basic models which operate on propane gas exclusively and have the same orifice (0.040 inches diameter). Proper firing rates are obtained by means of a simple gas pressure adjustment. The Sno Gard heaters have side mount brackets which fasten the units to the ties. The heaters are available in manual or AC/DC automatic operations. These units have controlled heating by conduction, convection and radiation. *Vapor Corp.*

Cable transmissions (RA-8)

A 12 megahertz coaxial cable telephone system will provide up to 2,700 telephone circuits on two 9.5-millimeter coaxial cores. Repeaters are installed underground and power fed over the cable. The nominal repeater spacing is about 2.8 miles and 13 repeaters can be fed from one terminal, allowing a maximum distance of about 75 miles between power feeding points. A supervisory scheme enables terminal faults to be identified and dependent repeater faults to be located. *Standard Telephone & Cables Ltd.*

Sonic cleaners (RA-5)

Sonic energy cleaner equipment features three basic units: a cleaner, which has a sonic energy generator, heaters, filter, recirculating pump, timer and controls; a rinsing cabinet which uses hot water with automatic or manual controls; and a drying cabinet. Each tank, cleaner, rinse and dryer measures 18 by 25 by 14.5 inches. The complete system is self-contained, needing only power, water and drains for installation. *Bendix Instruments & Life Support Div.*

Facsimile service (RA-7)

A new facsimile service is now available to 46 cities via Western Union's Info-fax 100. It provides a transmitter-receiver over which an 8½-by-11-inch page can be sent in 3.6 minutes. An 8½-by-5-inch page can be sent in 1.8 minutes. The Info-fax 100 can be unattended as the receiving machine operates automatically and continuous roll-fed paper is used. Each customer station has a WU push-button telephone and an Info-fax 100 unit. *Western Union.*

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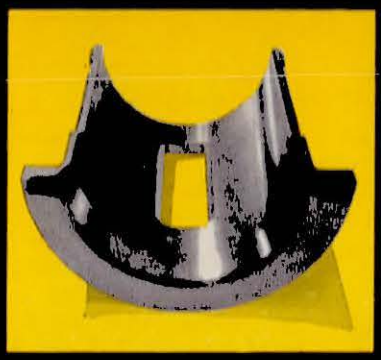

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Circle 11 on coupon page 31

Tomorrow's self-made man needs a break today.

And local businessmen can help. Now.
This summer.
While there's still time.

Thousands of disadvantaged school youngsters will soon be out of school and looking for jobs. Waiting for a chance to work at becoming a better citizen.

The corporate giants are already hiring. The Government is already helping.

But we need to reach Main Street. We need to reach you. Because without the support of every local businessman, we cannot succeed. What can you do?

Each one hire one.

Hire one young man or woman. Hire more if you can. But, at least, hire one.

No business is too small to help. Think about an extra pair of hands for the summer. Think about a bright youngster filling in vacation gaps. Think about next summer—and the one after that—when you'll have an "experienced beginner" to call on for extra help.

Do yourself a favor. Give a kid a break this summer. Do it now. Call the National Alliance of Businessmen office in your city.

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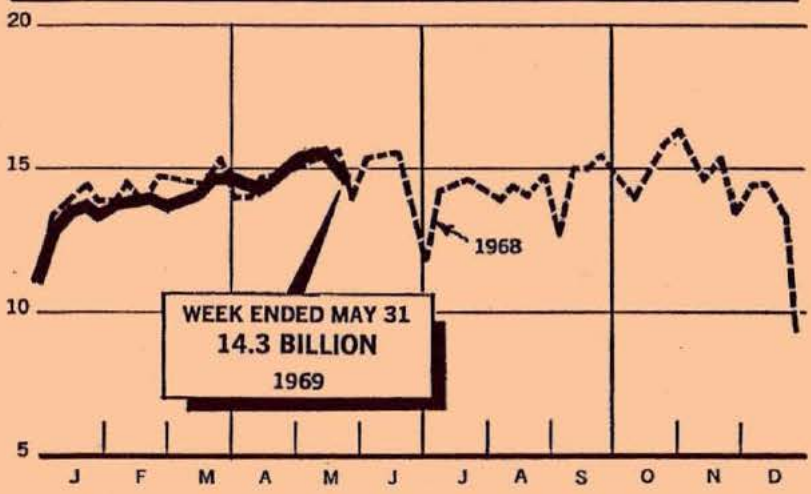
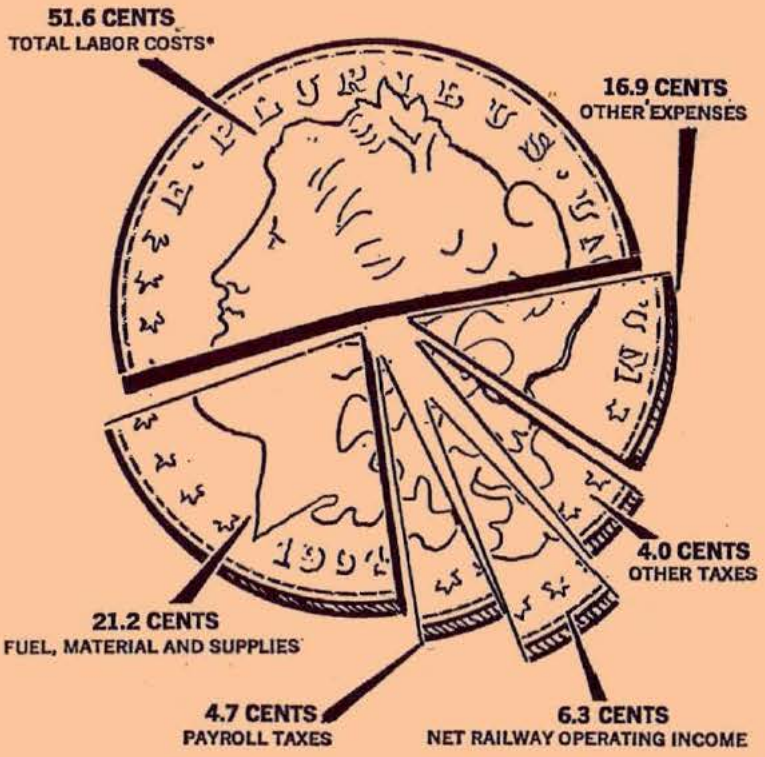
RAIL FREIGHT TRAFFIC TRENDS

BILLION TON-MILES (Estimated)



Source: Association of American Railroads

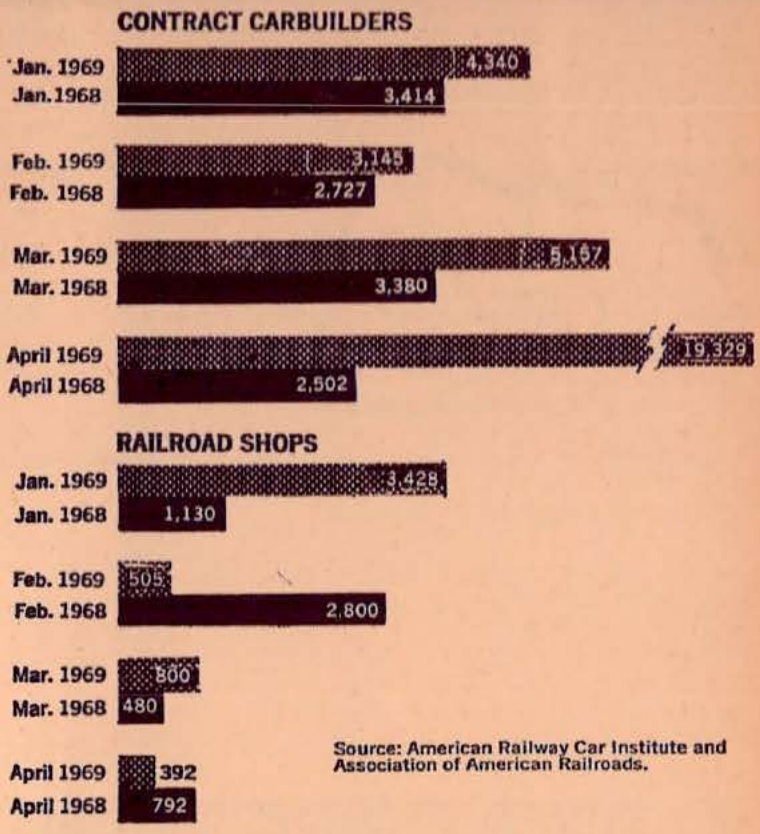
DISTRIBUTION OF RAILROAD REVENUE DOLLAR 1968



*Includes payroll taxes and health and welfare benefits, but excludes wages charged to investment accounts. Total wages, payroll taxes and health and welfare benefits amounted to 53.7 cents per revenue dollar in 1968.

Source: Economics and Finance Dept., AAR.

NEW FREIGHT-TRAIN CARS ORDERED



Source: American Railway Car Institute and Association of American Railroads.

NEW ORDERS FOR MACHINE TOOLS*

	April 1969 ($000)	April 1968 ($000)	4 mos., 1969 ($000)	4 mos., 1968 ($000)
Metal cutting tools	181,750	90,100	482,000	345,550
Metal forming tools	89,300	19,700	217,050	88,100

MACHINE TOOL SHIPMENTS*

	April 1969 ($000)	April 1968 ($000)	4 mos., 1969 ($000)	4 mos., 1968 ($000)
Metal cutting tools	102,050	105,900	391,500	463,400
Metal forming tools	28,700	28,150	123,350	121,100

*Including foreign and domestic.
Source: National Machine Tool Builders' Association.

MARKET OUTLOOK

CARLOADINGS

Loadings of revenue freight in the week ended June 7 totaled 570,115 cars, the Association of American Railroads announced on June 12. This was an increase of 32,089 cars, or 6.0%, compared with the previous week; a decrease of 15,344 cars, or 2.6%, compared with the corresponding week last year; and a decrease of 7,110 cars, or 1.2%, compared with the equivalent 1967 week. Ton-miles generated by carloadings in the week ended June 7 are estimated at 15.2 billion, the same as for the corresponding week of 1968, and 4.3% above the 1967 week.

REVENUE FREIGHT CARLOADINGS

Commodity	May 31 week	Preceding week	Per cent change
Grain	18,879	20,933	−9.8
Farm products	14,644	16,215	−9.7
Metallic ores	49,806	48,798	+2.1
Coal	95,760	110,837	−13.6
Crushed stone, gravel & sand	32,307	35,272	−8.4
Nonmetallic minerals	11,160	11,017	+1.3
Grain mill products	17,868	19,616	−8.9
Food & kindred products	22,851	24,098	−5.2
Primary forest products	25,569	25,533	+0.1
Lumber & wood products (except furniture)	15,486	16,764	−7.6
Pulp, paper & allied products	24,530	25,556	−4.0
Chemicals & allied products	28,053	30,996	−9.5
Petroleum products	10,314	11,546	−10.7
Stone, clay & glass products	21,633	23,756	−8.9
Coke	8,813	8,308	+6.1
Metals & products	29,978	30,580	−2.0
Motor vehicles & equipment	21,407	23,346	−8.3
Waste & scrap materials	13,713	15,658	−12.4
Forwarder & shipper assn. traffic	6,592	6,586	+0.1
All other carloads	67,006	72,894	−8.1
LCL traffic	1,657	2,039	−18.7
Total cars loaded	538,026	580,348	−7.3

CUMULATIVE TOTAL	1969	1968	1967
22 WEEKS	11,648,571	11,707,989	11,783,450

PIGGYBACK CARLOADINGS

U. S. piggyback loadings for the week ended May 31 totaled 23,204 cars, carrying 37,676 trailers, compared with 22,821 cars, carrying 37,280 trailers, in the corresponding 1968 week. Loadings for 1969 up to May 31 totaled 558,213 cars, carrying 916,305 trailers, compared with 545,193 cars, carrying 882,141 trailers, in the corresponding period of 1968.

IN CANADA

Cumulative	Revenue Cars Loaded	Total Cars Rec'd from Conections
May 14, 1969	1,347,159	475,907
May 14, 1968	1,318,628	465,367

FREIGHT-TRAIN CARS

● *Trailer Train.*—Ordered 466 new cars as follows: from Bethlehem Steel, 300 89-ft 4-in. standard-level cars; from Pullman-Standard, 133 89-ft 4-in. low level cars and 33 60-ft flat cars. New cars ordered by TTX since Jan. 1 now total 3,091. As of June 6, TTX had 51,661 cars in service or on order.

● *Orders and deliveries.*—Orders for new and rebuilt freight cars totaled 20,286 in April, three times the 6,678 new and rebuilt freight cars ordered in March and more than five times the 3,695 cars ordered in April 1968. Orders were placed in April for 19,721 new freight cars, compared with 5,957 in March and 3,294 in April 1968. Rebuilds ordered in April totaled 565, compared with 721 in March and 401 in April 1968. Backlog of new cars on order and undelivered on May 1 was 47,208, compared with 34,068 on April 1 and 20,314 on May 1, 1968. Rebuilds on order May 1 totaled 4,001, campared with 3,966 on April 1 and 6,801 on May 1, 1968.

FREIGHT-TRAIN CARS ORDERED AND DELIVERED IN APRIL AND BACKLOG OF ORDERS ON MAY 1, 1969

ORDERED

	Apr. 1969	Mar. 1969	Apr. 1968
To be built new by car builders	19,329	5,157	2,502
To be built new in railroad shops	392	800	792
To be built new—total	19,721	5,957	3,294
To be rebuilt	565	721	401
TOTAL ORDERED	20,286	6,678	3,695

DELIVERED

Built new by car builders	5,348	4,516	3,395
Built new in railroad shops	1,218	796	2,379
Built new—total	6,566	5,312	5,774
Rebuilt	530	451	860
TOTAL DELIVERED	7,096	5,763	6,634

ON ORDER AND UNDELIVERED

	May 1, 1969	April 1, 1969	May 1, 1968
To be built new by car builders	38,292	24,326	10,862
To be built new in railroad shops	8,916	9,742	9,452
To be built new—total	47,208	34,068	20,314
To be rebuilt	4,001	3,966	6,801
TOTAL ON ORDER	51,209	38,034	27,115

● *May bad order ratio 0.1% below 1968.*—Class I roads on May 1, 1969, owned 1,449,325 freight cars, 26,491 less than on May 1, 1968, according to AAR report summarized below. Bad order ratio was 0.1% lower than last year.

	May 1, 1969	May 1, 1968	Change
Car ownership	1,449,325	1,475,816	−26,491
Waiting repair	73,616	77,044	− 3,428
Repair ratio	5.1%	5.2%	− 0.1%

YOU OUGHT TO KNOW

For Alberta's new railway, an auspicious start

Early critics called it a boondoggle, a "white elephant" of a railroad. But now that the 234-mile Alberta Resources Railway is completed and in business (the first official train ran May 28), its prospects look good. Some pluses: the decision of three oil companies to build an on-line gas plant that will produce 3,600 barrels of condensate and 100 long tons of sulphur a day, as well as 40 million cubic feet of natural gas; the signing of a $450-million contract under which McIntyre Porcupine Mines Ltd. will supply 29.5 millions tons of coal to Japan; plans of pulp, plywood and lumbering companies to begin cutting into 14,091 square miles of virgin timber; and projected development of hydro-electric plants alongside the line. The new railway took five years to build, cost $96 million.

Bids on IC commuter cars are asked

Car builders will have until Aug. 6 to submit proposals to the Chicago South Suburban Mass Transit District for 130 new commuter cars to be operated over Illinois Central. CSSMTD will open bids at 8 p.m. that day at Harvey, Ill., city hall. The new cars—double-deck, air conditioned and designed for electrified operation—are to be in service next year.

Clark expands to meet container demand

Clark Equipment will invest $3 million to more than double the capacity of its Trailer Division's Reading, Pa., plant. John Page, division president, said the 108,000 square feet of new plant area (added to the present 80,000 square feet) will be used to produce as many as 30 shipping containers and container chassis daily to help meet world-wide demand.

New cars for N.Y. commuters demanded by PSC

The State of New York has taken the position that it's up to the public to provide public transportation facilities that can't pay their own way—and to accomplish this in the New York City area, the Metropolitan Transportation Commission has embarked on a $2.9-billion capital program. A "long-range" goal of this program is to help Penn Central re-equip its money-losing Harlem and Hudson commuter lines, which 40,000 people use daily. But "long range" is too long for the State Public Service Commission. In an order sharply critical of present service, the PSC ordered the railroad to acquire 80 new cars and 24 locomotives as an interim measure. The order, which followed public hearings, also called for other improvements to provide "safe, adequate, just and reasonable" service. Who will pay? The PSC had no "just and reasonable" suggestions about that.

Illinois House advances CTA tax, aid bills

Chicago Transit Authority's plans to build two new downtown subway systems have cleared an important first hurdle. With no opposing votes recorded, the Illinois House approved a bill which would permit formation of a special urban transit district with taxing and bonding powers (RA, May 5, p. 24). Meanwhile, in a surprise move, the House revived a transit-aid measure which had been killed in committee only a few weeks ago. The bill would allow certain counties, Cook County (Chicago) among them, to levy a gasoline tax of up to two cents a gallon for transit-system subsidy.

For the Record

Due to a printer's error, an incomplete sentence appeared in the article, "TOFC/COFC Terminals: Key to Service and Growth," in the May 26 issue of Railway Age. As published, this sentence read, "Santa Fe's Caiazza and Hopkins are also among those who would favor AAR specs on TOFC/COFC equipment Santa Fe itself has acquired." It should have read, "Santa Fe's Caiazza and Hopkins are also among those who would favor AAR specs on TOFC/COFC equipment—though they're immensely satisfied with the quality of the equipment Santa Fe itself has acquired."

Charlie H. Johns
ASL

James R. Morrell
ASL

Wm. F. Howes, Jr.
C&O-B&O

David A. Watts
C&O-B&O

Donald G. Wooden
C&O-B&O

Harry C. Miller
IC

PEOPLE IN THE NEWS

AMERICAN SHORT LINE RAILROAD ASSN.—Charlie H. Johns, general counsel, Washington, D.C., elected vice president. **James R. Morrell** elected secretary. Mr. Morrell will continue to serve as traffic manager, Eastern Region.

CHESAPEAKE & OHIO—BALTIMORE & OHIO.—William F. Howes, Jr., assistant director of passenger services, promoted to director of passenger services, Baltimore, succeeding **David A. Watts,** promoted to director of corporate planning, replacing **Stanley M. Christovich** (RA, May 19, p. 34).

Donald G. Wooden, director of cost research, named director of financial planning, Baltimore. **Walter B. Wright,** director of profit margin research, named director of cost and profit margin research, with headquarters as before at Cleveland.

William Henschell, Jr., named assistant general manager, Northern Region, Detroit. **Paul E. Brammer,** general manager, Chicago Terminals, promoted to general manager—operations planning, Baltimore, succeeding Mr. Henschell.

ERIE LACKAWANNA. — Wilbur Cole, freight traffic manager, New York, appointed assistant vice president, freight sales and service, Chicago, succeeding **Ray K. Lovitt,** who has joined the **Norfolk & Western** as assistant vice president—sales, Chicago. **R. E. Fahey,** trainmaster, Akron, Ohio, transferred to Youngstown.

ILLINOIS CENTRAL.—Harry C. Miller, director of purchases and materials, elected vice president-materials management.

OBITUARY

Arthur C. Carlson, 49, staff assistant, Public Relations Department, **Nationwide Industries, Inc.,** died May 18.

W. Edward Cartwright, 46, manager of foreign freight sales, **Milwaukee,** died May 20 at Hoffman Estates, Ill.

Aloysius W. Laskoske, 67, who retired in Nov. 1966 as vice president—operation, **New York Central** (now Penn Central), died June 5 at Lawrence Hospital, Bronxville, N.Y.

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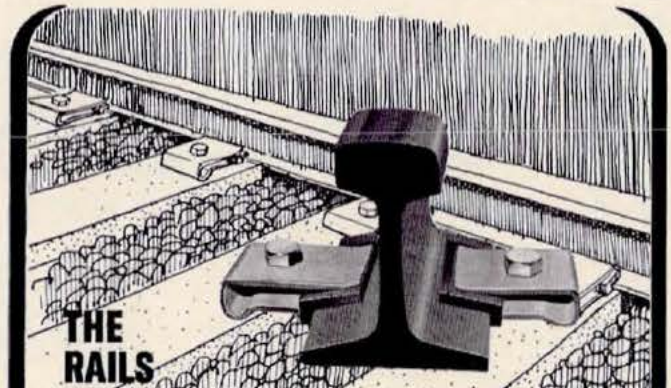

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Circle 14 on coupon page 31

Flood preparation paid off for CB&Q

(Continued from page 27)

for any evidence of impending trouble, such as seepage, washing and sand boils. Each of them reported to a mobile unit which in turn was set up to arrange for necessary protective action. The back-up organization included a Burro crane with four or five cars of sand bags, equipped with a portable light plant and manned by a section gang of eight to ten men. For use if washing developed on the bluff side of the dump, a fleet of dump trucks loaded with rock spalls was kept at hand.

Thanks to precautions taken in the two-mile stretch south of Winona no serious trouble was experienced, says the Burlington's Bryan. He attributes much of the credit for this success to the constant patrolling and inspection of the dump. Serious damage was incurred in this area in 1965.

One of the last precautionary steps to be taken was the raising of the main track at Savanna, Ill., six to eight inches for a distance of 1,200 feet. In this work the Burlington sought and obtained the cooperation of the Milwaukee which crosses the Q in the area of the track raise. "The result of the raise," says Bryan, "was that the water never went over our tracks in this area."

● **Where riprap paid off.** One of the most serious threats faced by Burlington forces during the flood started on April 21 when extremely high winds created the danger of embankment washing all the way from St. Paul south to Dubuque. "Because of the riprap placed in this territory earlier," said Bryan, "the damage was held to a minimum. But the wave action was extremely severe. If it were not for the riprap protection we would certainly have lost the embankment in some areas."

The eight days from April 12 to April 20 was the critical period on the Burlington, say the engineers. Dayton's Bluff yard, which went out on April 12, was placed back in service on April 22. Meanwhile, in accordance with the flood-control plan, all switch machines threatened with flooding were removed, all the way along the line from St. Paul to LaCrosse, 140 miles. Also, all signal batteries in the area were removed and the signal wells were sandbagged. However, by the time service was restored on April 22, the switch machines and batteries had been replaced.

The road is well satisfied that the money spent this year in preparing for the floods has already paid off. And, as Bryan points out, much of the preparatory work is permanent and will offer protection for years to come. ■

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VIEWPOINT

Public relations: A vital job for railroads

Increasingly, the railroad industry talks in terms of tomorrow—of tomorrow's railroads, tomorrow's transportation systems. Perhaps once, railroads could be accused of failing to plan. That accusation is no longer valid and, from all indications, it never will be again. But there is still a major problem to be faced—the problem of translating tomorrow into terms the public (and its elected representatives) can understand today.

The burden of this problem is heavy, and it falls broadly upon railroad management. Perhaps most heavily and directly, however, it falls on the group of men which meets this week in annual conference—the industry's public relations practitioners.

A long-time participant in the p.r. wars takes this view: "Between the railroads and their suppliers, there is a super-abundance of technological know-how. Our public-relations IQ has been high. But we have been outsmarted by our competitors in the human and social engineering that shapes public transportation policies at both the state and the federal level. It is not encouraging to observe that, on the national level, transportation legislation which had the backing of both Democrat and Republican presidents has been watered-down, stalemated, defeated, by our competitors. And this, in my opinion, is the crux of the problem—now and for the future."

Arguments against this position can be taken, of course. It could be charged that a Congressional pork-barrel philosophy and the Corps of Engineers' desire to stay healthy have made waterways operators what they are today. It could be charged that the same kind of vote-getting effort in Congress produced the Interstate Highway System and made the motor carriers what they are today. It could be charged that R&D expenditures in the name of the national defense have had a big role in making air transportation what it is today. But all of these charges could be true, and it still would not change the basic premise—which is, that *railroads* have not yet been able to convince the voters and the vote-seekers that *railroads* are (1) essential, and (2) deserving of support.

TIME TO ACCENTUATE THE POSITIVE

Under the circumstances, the practitioner of the p.r. artform finds himself in a bind. Much of his time, still, is spent not in accentuating the positive but in trying to eliminate the negative. And when the opportunity to speak out boldly and positively does come, in all too many cases it comes through so many filters that only the most knowledgeable railroad-watchers can figure what the story is all about, why it's important, what it really means in a broad context.

Compared to the sales function or the marketing function or the operating function or that function which keeps a railroad square with the legalities, public relations sometimes seems minor in its scope. But sharp management knows different. Assuming the base—the product—is sound, then no function on tomorrow's railroad will be more important than this one job: Telling it to the people.

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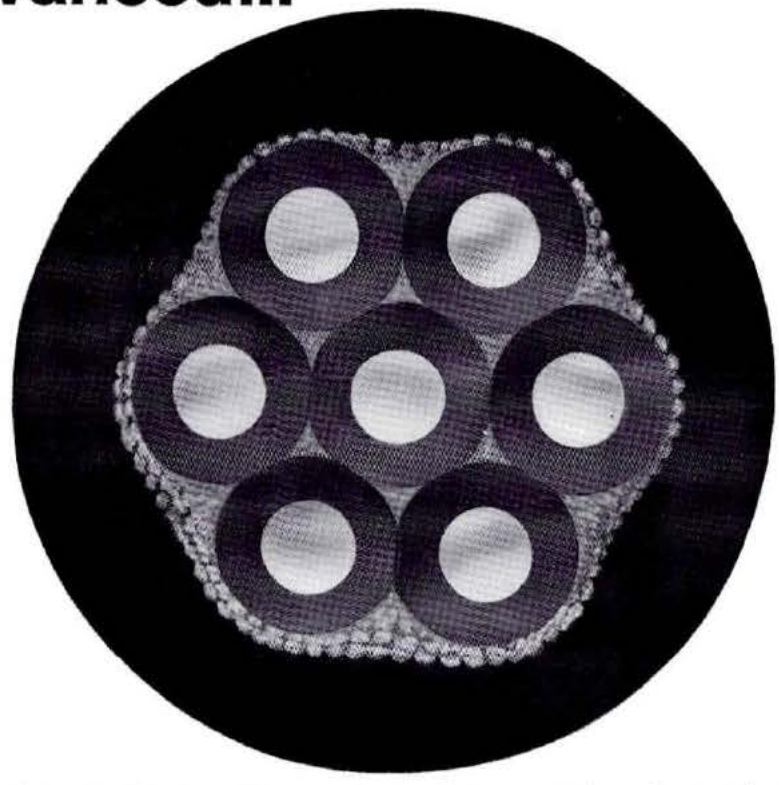

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